The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 27 TULSA, OKLAHOMA, NOVEMBER 27, 1924

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Oklahoma Causes Production Increase

Average daily production in United States week ended Nov. 22, 1,947,354 bbls. Gain from previous week, 8,108 bbls.

Crude Output of State Shows Gain of 14,500 Bbls. Daily. New Field Opened in Texas. Salt Creek Has Possibilities

Highest daily average estimated production this year, week ended Aug. 23, 2,057,319 bbls. Lowest, January 12, 1,871,143 bbls.

By Andrew M. Rowley

Another big increase in production of crude petroleum in Oklahoma last week while other fields of the country, except the Rocky Mountain area, showed little change from their output of the week previous, resulted in a net increase in production for all fields of the United States totaling 8,108 barrels a day. The increase in Oklahoma amounted to more than 14,500 barrels, the deep sand area of the Tonkawa Field, the Papoose Pool and Cromwell being chiefly responsible. The Rocky Mountain section showed a decline of about 7,000 barrels daily due to the holding of operations in that area to as low a point as possible.

Although Oklahoma has shown an increase in production of about 26,500 barrels daily during the past two weeks, indications early this week are the State will register another gain during the week, although it probably will be much smaller than last week. Other sections of the country, too, are showing signs of adding to their output. California's production last week averaged exactly the same as during the week before, losses in some of the fields being offset by gains in others.

A new field seems to have been opened in Texas by Col. A. E. Humphreys, when the Boyd Oil Company's No. 1 Boyd, located between the Mexia and Currie fields, in Limestone County, near the junction with Freestone and Navarro counties, started at the rate of 500 barrels daily of 40 gravity oil with the sand barely touched. Scouts expressed the opinion the well would be good for 2,000 barrels when drilled deeper. Another outstanding development in Texas was the bringing in of a 3,000-barrel well by the Big Lake Oil Company in the Reagan County Field. The producer in Jim Hogg County, Texas, brought in recently by Henne, Winch & Fariss, averaged better than 1,200 barrels daily last week.

As has been the case for some time, Oklahoma continues to be the center of interest as far as crude oil production is concerned. The further deepening of producers from the deep sand area at Tonkawa was the principal cause of the increase in output of that field during the week. Two new wells were brought in from the deep sand late in the week, too late to figure much in the average weekly production. The Papoose Pool showed another material increase and is attracting considerable attention. A map of this area with the latest developments there is shown on page 23 of this issue.

Considerable misunderstanding in some quarters seems to have arisen from the decreases in production shown in the Rocky Mountain area. Frank B. Taylor, our Rocky Mountain staff correspondent, shows in his review this week the great possibilities of the Salt Creek Field and he makes the statement that field, right at this time, is capable of producing as much oil as it did when it was said to have reached its peak. The matter of present production is more a matter of economical operation than a rapid decline of the wells, he says. He brings out the fact the Lakota sand underlying probably 4,500 acres of the Salt Creek Field has never been fully tested and that it is probable big wells may be expected to produce from that sand when operators feel there is a market for the oil.

Consumption of crude petroleum is holding up even better than the most optimistic had expected with the result deliveries by large pipe line companies are increasing. One of the major companies is said to have increased its deliveries nearly 18,000 barrels a day during the past week, much of this oil coming from storage. Producers in Pennsylvania are continuing to hold their crude for higher prices with the result refiners are having great difficulty in procuring enough crude for their needs.

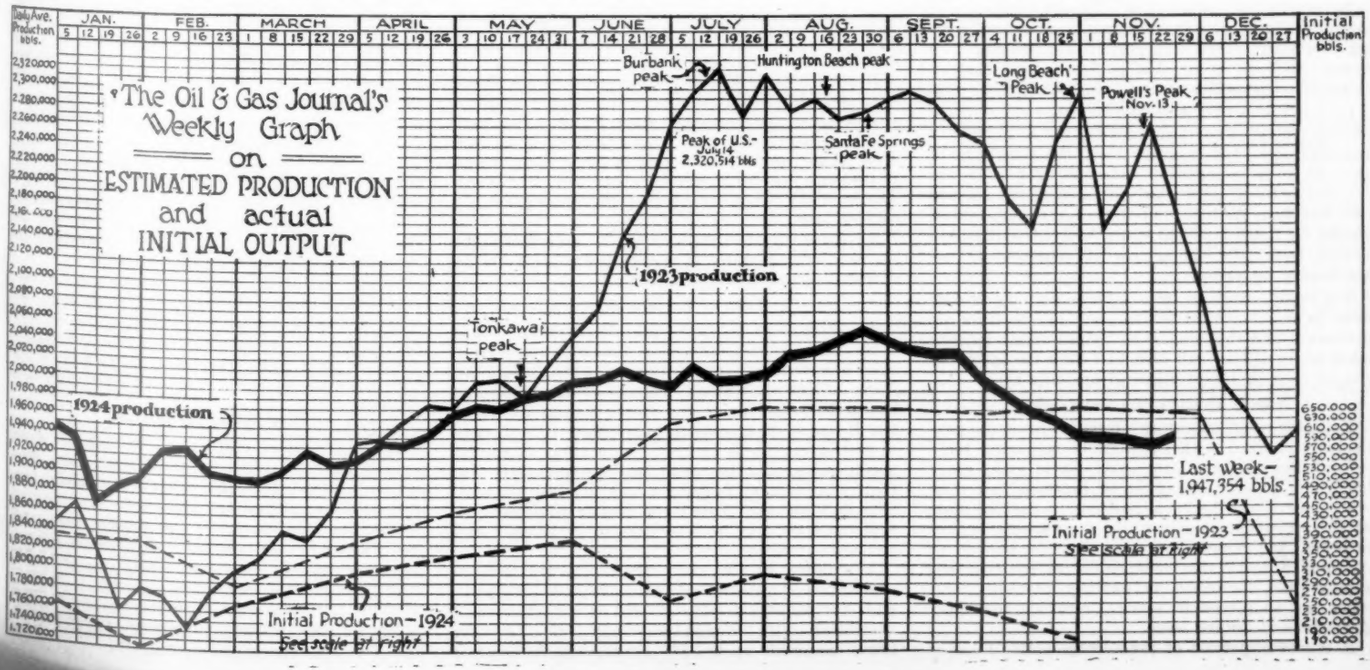
This seeming tightening of the crude situation has intensified the feeling advances in crude oil prices may be expected within the near future. At least a part of the industry appears to feel the large quantity of crude above ground will not prove such a burden in view of the increasing demand for fuel oil and for oil for domestic burners, in addition to the steadily increasing consumption of gasoline. Gasoline price increases in various sections of the country during the past few days are thought to presage advances in crude prices although the latter usually come before the former. While the prices of crude undoubtedly will be advanced in different fields within the near future, operators who make a careful study of the situation still believe the longer these advances are delayed the more lasting will be the benefit derived by producers from the higher prices. Higher prices mean more production and the entire industry certainly would be in a more stable condition were stocks of crude and refined oils reduced materially.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended November 22, and a comparison with previous week follows:

	Nov. 22	Nov. 15
Oklahoma—Northern Fields:		
Tonkawa	105,750	97,620
Burbank	72,710	72,895
Other Osage Fields	41,025	41,050
Cushing and Shamrock	23,640	23,650
Bristow and Eastern Bristow	40,350	41,130
Cromwell	50,330	48,220
Papoose	25,750	21,240
Northern Miscellaneous	101,350	100,610
Southern Fields	68,275	68,290
Total Oklahoma	529,180	514,705
North Louisiana	58,705	60,171
Arkansas—		
El Dorado and Calion	11,355	11,410
Smackover Light	32,690	31,540
Smackover Heavy	69,915	70,795
Stephens and Nevada	3,530	3,565
Total Arkansas	117,490	117,310
North Central Texas	127,364	125,260
Powell	70,200	70,200
Mexia, Currie, Richland, etc.	52,050	52,800
Kansas	88,400	88,950
Total Mid-Continent Area	1,043,389	1,029,396
Gulf Coast	85,320	85,425
Southwest Texas	42,460	40,935
Eastern	106,100	106,450
Rocky Mountain Area	83,585	90,540
California—		
Santa Fe Springs	52,000	52,000
Long Beach	128,000	130,000
Huntington Beach	41,000	39,000
Torrance	45,500	46,000
Dominguez	32,000	32,000
Remainder of State	288,000	287,500
Total California	586,500	586,500
Total United States	1,947,354	1,939,246

INCREASE, 8,108 BARRELS


Daily Ave. Production bbls.
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
Initial Production bbls.
The Oil & Gas Journal's Weekly Graph on ESTIMATED PRODUCTION and actual INITIAL OUTPUT
Burbank peak
Huntington Beach peak
Long Beach Peak
Powell's Peak Nov. 13
Peak of U.S. July 14 2,320,514 bbls
Santa Fe Springs peak
1923 production
Tonkawa peak
1924 production
Last week 1,947,354 bbls.
Initial Production—1923
See scale at right
Initial Production—1924
See scale at right

Reclaiming Materials in Oil Industry

Great Saving Can Be Effected by Producing and Refining Companies If Proper Cooperation Is Given Warehouse Department

By Col. Howard B. Oursler
Superintendent of Warehouses, Marland Refining Co.

The value of reclaiming used, second hand and neglected material has rarely been given serious thought by either field producing or refinery operators, or by those who should be charged with at least reasonable conservation of funds and materials in the keeping of those who are expected to produce dividends for those who have invested vast sums to procure oil which ultimately runs the wheels of general industry and the pleasurable operation of the ever increasing motor car.

The oil industry in general is probably the least efficient in its operation, when compared with the great manufacturing and allied corporations who are required, by close competition, to deliver enormous production of commodities at a minimum operating cost, in order to continue in the field and produce satisfactory dividends to stockholders year after year.

Many inefficiently managed concerns in the oil industry would long since have been driven from the field of activity, were it not for the fact that they frequently find enormous pools which are provided from our natural resources, and almost over night, have their general treasury replenished. When an oil company fails, it may frequently be traced to a failure of nature to assist in its treasury replenishment, and this condition is the leading factor which makes the oil business so often a gamble, not only for executives and operatives, but for the stockholders as well.

Conservation Most Necessary

The survival of the fittest has come and will continue to come to the companies who take advantage of every reasonable conservation idea that can be demonstrated as sound and as not interfering with the general operation of the industry.

With the active support and cooperation of operating heads of departments, the conservation of materials is a most necessary part of any policy of saving and can best be accomplished through the department charged with original supply and under the direct supervision of the warehouse department, which should have the best knowledge of general supplies used by the various and allied operators.

No system of reclamation can be of permanent value unless the operating department officials and their assistants are in thorough accord and willing to support every conservation idea, provided of course, such parts of this policy do not hamper or conflict with efficient and economical production.

In this connection it should be made clear to operating officials that their departments in particular and their company in general are the recipients of gain in such reclamation activities, for they are credited with all profit derived after actual salvage cost has been charged and they receive substantial credits for much material which had frequently been junked under the old system of disposing of unserviceable material.

The credit obtained by a salvage activity is confined to an economical service duty to operating departments and this should be judged solely by how much material they can save, and what the operating cost of such saving of material amounts to.

Supply Department Supervision

Realizing that operating officials are more particularly charged with successfully managing their several departments, to the exclusion of many other important duties, it is not to be expected that they will observe and be in a position to prevent loss, so that it would appear to be a reasonable policy to permit the department responsible for supply, to continue a reasonable supervision, to see that the supply once furnished is usefully installed, and when not so placed in service, returned to supply for care and future issue.

A casual inspection of the average active lease or refinery will demonstrate clearly the importance and the necessity of collecting and looking after the thousand and one articles of oil industry supply which lay around, a total loss to the owners, and unavailable for use when needed, resulting in additional expenditures for supplies, when the ones already purchased and paid for, could be made as serviceable as new ones purchased.

In adopting a policy of reclamation of oil industry supplies, a reasonably liberal appropriation should be made for building and necessary equipment, so that reclaiming activities can be conducted promptly and efficiently and at minimum cost for operating expenses.

A methodical system of receiving and handling materials to be reconditioned is absolutely necessary for successful results and continuous operation keeps an experienced personnel available for work

Col. Howard B. Oursler

which frequently requires prompt attention to save additional expense by purchase of new material or supplies.

Many operating officials will be surprised to learn that valuable materials are being removed from refineries by unscrupulous junk dealers who offer bribes to have what they want placed in scrap and these same materials are sold back, in many cases to the same concern from whom they originally came, and at many times the amount they brought when sold as junk.

To prevent this condition it is necessary that materials not actually in use, be protected by being stored until ready for installation.

Cost of Reclamation

An estimate as to what outlay is necessary before beginning salvage operations, would be based largely upon how seriously it was proposed to enter into the work. A certain amount of reclamation can always be carried on without any outlay except for labor but if the subject is to be approached with a view to getting maximum results, then a study of special conditions should be made and the necessary authority secured to prepare a location, erect a suitable building and install the proper equipment so that the work may be performed in an efficient and economical manner.

A building in the area where the greatest accumulation of material originates, substantially built, will cost $10,000 to $15,000, and it should be well ventilated, with enough traveling hoists, so that heavy materials up to 3,000 pounds can be handled expeditiously to or from any part of the interior space.

The equipment which may be added to, as necessity requires, would normally consist of a complete set of valve reseating tools for reclaiming globe valves one-fourth to twelve inches and one for the same use for gate valves 1½ to 16 inches—tools and equipment for acetylene cutting and welding, brass mallets, wrenches for seating valve rings, emory wheel, hydraulic hand pump for testing valves up to 2,000 pounds pressure, pipe cutters to include up to 4-inch, pipe threaders to include up to 4-inch, pipe and chain tongs to include up to 6-inch, cast steel plate about 10 by 18 inches, power saw up to 3 by 5-inch, small portable forge and anvil, stocks and dies for bolts ½ to 1¼ and a stationary or portable pipe straightening machine for pipe up to 6-inch, together with the necessary small tools usually used by mechanics in this class of work.

The question is often asked, "What used materials has salvage value?" Almost all material used in the field and refinery may be reclaimd, but judgment must be exercised as to the cost and the immediate necessity for its use is also a factor. The reclaiming cost of material in some cases will not exceed 5 per cent but other material may run as high as 75 per cent, the latter being the case where excessive charges are made for parts lost, the purchase of which is excessively high. In the latter case it is not advisable to reclaim unless the original supply is difficult to secure, due to market conditions.

Cost 25 Per Cent of New Material

As a general rule, where reclaiming of a material runs as high as 50 per cent of new, the advisability of salvage is doubtful and the incomplete parts collected should be stored but not reassembled unless the necessary spare parts come in. Some parts should be kept for repairs, for which spare material is almost always in demand.

There is no good reason why the salvage cost of reclamation should exceed 25 per cent of the cost of new material, but even an operating cost of one-third value of new material will produc substantial dividends to any company who will engage in this feature of economy and if field production and refinery operators will approach this subject with an open mind, desirous of knowing the truth, and will cooperate in giving it a fair trial, it will go a long way toward reducing their operating costs and will become a hobby wth them when they see the benefits that are shown on the favorable side of their ledgers.

Some of the principal items of salvage operations consist of reconditioning bad order line pipe up to 4-inch; rebuilding all sizes and makes of globe and gate valves; cleaning and greasing all kinds of small fittings and rethreading in addition, when necessary, all large or high pressure fittings; repairing gas regulators, pressure gauges, hand pumps and the reclamation of steel and wooden tanks.

On March 1, 1923, the Marland Refining Company started salvaging materials in a small way, without a building or proper tools with which to do the work, and it was four months later before a building and adequate tools were provided. so as to make it possible to do the work in an economical and expeditious manner.

Big Saving by Marland

The approximate cost of the building was $9,000 and the cost of equipment about $3,000 more. Since operation began the force engaged has ranged from two to six employes, and during the first three six months' periods, materials and supplies were saved and placed in the central warehouse as follows:

March 1, 1923 to August 31, 1923.....$21,747.92
September 1, 1923, to February 29, 1924... 38,911.71
March 1 1924, to August 31, 1924..... 41,750.34

During the first year's operation the cost of re

(Continued on Page 116)

Mid-Continent Gasoline Supremacy

Producing 50 Per Cent of the Crude Oil of the United States Out of Which Is Obtained 60 Per Cent of the Gasoline Made

By Charles E. Bowles

The Mid-Continent is the backbone of the oil industry in the United States—and the world—not so much on account of the tremendous volume of its production, from a production standpoint, but because at least 60 per cent of the gasoline of the United States is made from the crude oil that it produces.

In 1923 the Mid-Continent, not including the Gulf Coast, produced 348,000,000 barrels of crude oil, or over 47 per cent of all the crude produced in the United States.

Conservatively, from the crude produced in the Mid-Continent, at least 139,000,000 barrels of gasoline could have been made. This is over 60 per cent of all of the gasoline that could have been made from all of the crude from all of the fields of the United States.

In studying the accompanying table it should be borne in mind that the figures for the production of crude oil are assembled by the United States Geological Survey, while the figures for the oils run to stills and the gasoline, etc., recovered, are assembled by the United States Bureau of Mines. Also, that the production of crude oil is credited by the Geological Survey to the different areas that produce it, while the gasoline, etc., recovered is credited by the Bureau of Mines to the areas in which the refineries are located.

Producing Capacity

In order therefore to arrive at an idea of the "gasoline producing capacity" of the different crude oil producing areas of the United States the problem must be attacked from a different angle.

On the basis of both geographic distribution and the essential differences in the quality of the crude produced, the oil producing areas and the refining areas can be divided into Eastern, Mid-Continent, Gulf Coast, Rocky Mountain and Pacific Coast.

The refineries in the Eastern area handle oils from the Eastern fields, from the Mid-Continent, the Gulf Coast, Wyoming (through the new Sinclair pipe line), the California fields, Mexico and a little from South America.

The refineries in the Mid-Continent handle their own crudes, with the possibility of some oil from Wyoming.

The Gulf Coast refineries handle oil from the Gulf Coast, from the Mid-Continent, from California, from Mexico and possibly some from Wyoming.

Rocky Mountain refineries handle only the oil produced in their own area, hence clear comparisons can be drawn from the crude produced in this area and the refined products recovered.

The refineries in California also handle only California crudes, and therefore a close correlation can be drawn between the crude produced and the gasoline recovered.

Percentage Recoveries

Referring to Table 1 it will be noted that in 1923 the East Coast refineries recovered 27.4 per cent gasoline. These refineries are located in Baltimore, Philadelphia, New York harbor, Rhode Island and Massachusetts, which obviously produce no crude oil, and the percentage of gasoline recovered clearly indicates that the widely different qualities of crudes handled by the different refineries the low gravity oils are handled in large proportions.

The next refining area recognized by the Bureau of Mines includes western New York, western Pennsylvania, West Virginia and eastern and central Ohio. Thirty-five per cent gasoline was recovered by the refineries in this area which handled locally-produced crudes with some from the adjoining States and from the Mid-Continent, but none from the Gulf Coast, California or Mexico.

The next refining area includes western Ohio, Indiana, Illinois, Kentucky and Tennessee.

Up to the opening of the Sinclair pipe line from Salt Creek all of the oil refined in this area was either produced locally or came from the Mid-Continent, largely the latter, as in 1923 this area produced slightly less than 20,000,000 barrels of oil and ran over 51,000,000 barrels to stills.

The big Standard refineries at Whiting Indiana, and Wood River, Illinois, the Sinclair refinery at East Chicago and the Roxana refinery at Wood River, all operated on Mid-Continent crude as is reflected by the 46.7 per cent of gasoline recovered.

The average percentage of gasoline recovery in these three areas east of the Mississippi, 27.4—35.0—46.7, throw an illuminating side light on the essential differences in the crude oils handled by the different types of refineries in the different areas.

Turning to the Mid-Continent which is essentially a high gravity oil field, we find almost as wide differences in the gasoline recoveries as in the Eastern area. In this connection however it must be borne in mind that the figures for Texas and Louisiana-Arkansas include not only the light oil produced in these States but the heavy oil from the Gulf Coast, oil from California and low grade oil from Mexico.

The refineries in Oklahoma and Kansas operate on their own crudes, with some light oils from the North Texas fields.

The high grade oils of North, Texas, Arkansas and North Louisiana are "pulled down" by the low gravity oils of the Gulf Coast and from Mexico as reflected in the lower percentages credited to Texas and Louisiana-Arkansas.

Back of the fact that the figures for Oklahoma-Kansas refineries (41.7 per cent) are lower than for the "Ohio-Indiana-Illinois-Kentucky-Tennessee" area (46.7) is the proof of the high quality of Mid-Continent crude—as well as the more important fact that the pipe lines leading out of the Mid-Continent transport enormous quantities of its highest gravity crudes to refineries located outside the Mid-Continent.

It is only natural that after spending millions of dollars building pipe lines leading out of the Mid-Continent, these same lines would carry the highest grade crude out of the Mid-Continent.

The full force of the effect of sending the larger part of the highest grade crudes out of the Oklahoma-Kansas area into the Illinois-Indiana area is emphasized by the figures in Table 1. In 1923 the refineries in Illinois-Indiana along with those in western Ohio, Kentucky and Tennessee produced 24,174,000 barrels of gasoline compared with 29,887,000 barrels from the Oklahoma-Kansas refineries. The recovery in the Illinois-Indiana area was 46.7 per cent and in the Oklahoma-Kansas area 41.7 per cent—and this in face of the fact that 251,000 barrels of refining capacity in Oklahoma-Kansas were equipped with cracking plants as against 165,500 barrels in Illinois-Indiana. Nothing could more clearly prove that the large part of the highest gravity crude is going out the Mid-Continent.

The refineries in the Rocky Mountain area handle nothing but their own crude. All of their gasoline comes from fractionation, cracking and blending with natural gasoline and if, for 1923, we use only the crude run to stills and the natural gasoline, the recovery is 54.4 per cent. However, in 1923 the refineries in this area used 6,293,000 barrels of "unfinished oils" which obviously were distillates rerun for closer fractionation and for cracking. If we add these "unfinished oils" to the crude and the natural gasoline, the recovery for 1923 was nearly 45 per cent.

In figuring the percentage of gasoline recovered

(Continued on Page 74)

TABLE 1—Crude Oil Run to Stills and Gasoline Recovered in 1923. All figures from Bureau of Mines Data

Area and Where Refined—	Oils Run to Stills (Bbls.)	Gasoline Made (Bbls.)	Per Cent
Eastern—			
East Coast	121,613,000	33,325,000	27.4
New York, Pennsylvania, West Virginia, East Ohio	21,441,000	7,509,000	35.0
West Ohio, Indiana, Illinois, Kentucky, Tennessee	51,732,000	24,174,000	46.7
Mid-Continent—			
Kansas and Oklahoma	71,684,000	29,887,000	41.7
Texas	105,515,000	29,083,000	27.5
Arkansas and Louisiana	41,753,000	10,320,000	24.7
Rocky Mountain—			
Wyoming, Montana and Colorado	27,637,000	15,053,000	54.4
Pacific Coast—			
California	151,126,000	30,552,000	20.2
Totals	**592,501,000**	**179,903,000**	**30 3**

TABLE 2—Crude Oil Produced, Estimated Gasoline Content, Oils Run to Stills and Gasoline Recovered in 1923. All Figures from United States Geological Survey and United States Bureau of Mines Except Estimates

Area—	Crude Produced (Bbls.)	*Est. Pct.	Gasoline Content (Bbls.)	Run to Stills (Bbls.)	Gasoline Made (Bbls.)
Eastern	40,129,000	40	16,051,000	194,786,000	65,008,000
Mid-Continent	348,460,000	40	139,384,000	218,952,000	69,290,000
Gulf Coast	33,289,000	10	3,334,000		
Rocky Mountain	47,653,000	45	21,444,000	27,637,000	15,053,000
Pacific Coast	262,876,000	20	52,575,000	151,126,000	30,552,000
Totals	**732,407,000**	**32**	**232,788,000**	**592,501,000**	**179,903,000**
Deduct foreign oil				48,761,000	*4,876,000
Domestic oil				**543,740,000**	***175,027,000**
Average gasoline recovered, 32%.					

*Estimated.

TABLE 3—Crude Oil Run to Stills and Gasoline Recovered, January 1 to September 30, 1924. All Figures from the United States Bureau of Mines

Area and Where Refined—	Oils Run to Stills (Bbls.)	Gasoline Made (Bbls.)	Per Cent
Eastern—			
East Coast	108,234,982	30,144,000	27.8
New York, Pennsylvania, West Virginia, East Ohio	17,072,445	6,173,000	36.1
West Ohio, Indiana, Illinois, Kentucky, Tennessee	44,300,209	20,579,000	46.4
Mid-Continent—			
Kansas and Oklahoma	60,751,344	26,056,000	42.9
Texas	94,127,981	29,670,000	31.5
Arkansas and Louisiana	37,526,185	8,945,000	23.8
Rocky Mountain—			
Wyoming, Montana and Colorado	25,903,100	11,767,000	45.5
Pacific Coast—			
California	115,419,138	24,457,000	21.2
Totals	**503,335,384**	**157,791,000**	**31.1**

Continued Buying in Oklahoma Market

Advances in Most Cases One Quarter Cent Although Some Products Command Half Cent More Than During Previous Week

By Ralph T. Baker

A continuation of buying which affected all grades of motor fuels was the outstanding feature of the week influencing refined markets in Group 3 (Oklahoma). The advance in most cases was ¼-cent, although some products commanded a price ½-cent above that of the previous week. It was another week of optimistic activity with some of the more cautious refiners and marketers showing evidences of a belief in continued strength in refined products. Gasoline stocks were further depleted and many refiners were predicting firm markets over the first half of December at least.

Jobbers and marketers were finding it hard work to get quotations on 58-60, 437 end point (U. S. Motor) gasoline over the balance of the month, one refiner turning down an offer of 7¾ cents for U. S. Motor gasoline in buyer's cars on a 25-car shipment during the remainder of November, according to reports. With practically all sales being made at a spot price of 8 cents, few refiners showed any inclination to take on new business in advance at this figure. Shipments over the first half of December were bringing 8 to 8¼ cents, with the latter quotation predominating.

Buyers of refined products are finding many of the refiners are oversold and that it will take at least 10 days in December for them to catch up with shipments on cars ordered out during November. There is a question concerning the trend of the market after these back orders are all cleaned up in Group 3 and other Mid-Continent refining centers. The fact that numerous big buyers have entered the market in the past few days after staying out for many months lends optimism to the facts already pointed out in previous issues of The Oil and Gas Journal.

Lack of Export Material

The shortage in some grade of gasoline, particularly the 64-66, 375 end point export grade, was reaching the acute stage, with practically none available for immediate shipment, excepting in one- or two-car orders. Quotations on this material were hard to get in North Texas or Oklahoma and export buying was at a standstill because of the lack of export material in sufficient quantities. Rumors of inquiries by several of the big exporting concerns continued to float about refining circles during the week, but no buying was accomplished. Shipment of the higher gravity materials to Canada continued during the week, both straight run products and blends being moved. Most refiners asserted they would be several days completing shipment of high gravity gasolines on both domestic and export purchases.

Group 3 refiners found the shortage of gasoline as acute in other parts of the Mid-Continent as it was in their own district. This fact added stimulus to the already firm tone. North Louisiana refiners were reported refusing to quote over the balance of November on U. S. Motor gasoline. The same shortage of material was noticed in Arkansas and North Texas where refineries were refusing to set prices. In some cases, refiners in North Texas quoted 8¼ cents for U. S. Motor gasoline for December shipment. The number of refiners who were forced to buy gasoline to take care of their orders or to protect their own concern's service stations was increased during the past week.

Scarcity of U. S. Motor

Reports that the Gulf Refining Co. had purchased about 200 cars of U. S. Motor gasoline in North Louisiana and North Texas served to dispel any doubts concerning the scarcity of this product as far as the refiners were concerned. It was also reported that the Gulf was unable to get all the gasoline it desired. A number of other large concerns are said to have sent out inquiries for gasoline principally the 64-66 export grade and U. S. Motor, and found that they could not get as much as they wanted.

Many refiners are freely predicting better prices for refined products during the remainder of 1924. Others who are more cautious feel present prices should hold until December 15, at least, and that there is a possibility of a slump occurring at that time, should the weather in all parts of the United States turn cold and stormy, thus bringing the consumption of gasoline to a standstill. They base their conclusions on the assumption that there will be no general crude price changes soon. At the present rate of production, one refiner pointed out it would take only a few days for some refiners to force distress gasoline on the market. They point out that jobbers would be slow in completing their orders with bad weather and that this surplus gasoline would fall to the refiners to store or sell on the spot market. The development of additional export buying late in December or early in January, 1925, is pointed out by some refiners as a possible means for the salvation of the present upward trend in refined products.

Danger, however, is seen by some men in a continuation of the present high refinery runs in the Mid-Continent Field. These men advise refiners to curtail operations or even shut down their plants following the time when they have cleaned up their domestic and export orders and new business shows a tendency to become dormant due to the cold weather. They point to the present good prices for gasoline as a result of its temporary scarcity. They show that high prices in the future can be maintained only by curtailing operations and the supply of motor fuel.

Most refiners feel an advance in the posted prices of Mid-Continent crude is close at hand. Higher tank wagon prices are also anticipated with most jobbers working on extremely narrow margins when forced to buy on the spot market. This condition was reflected during the past week when the Magnolia Petroleum Co. advanced tank wagon and service station prices 2 cents in Tulsa, after The Texas Co., the Pierce Petroleum Corp., and several independents had boosted the prices. In New England, also, the Standard Oil Co. of New York advanced gasoline 1 cent on Saturday, the other distributors following on Monday. The Standard Oil Co. of New Jersey on Monday advanced bunker oil 5 cents per barrel at New York, Baltimore and Norfolk, making the price $1.80 and 5 cents at Charleston, making the price $1.75. At the same time, Chicago buyers were finding gasoline and fuel oil much stronger and were forced to increase their prices to 8½ cents for the U. S. Motor gasoline, 9¼ to 9½ cents for the 60-62, 400 end point grade, 10¼ to 10½ cents for the 64-66, 375 end point gasoline, and $1.07½ to $1.10 for refinery fuel oil.

Kerosene Helped

The market for kerosene was helped considerably during the past week by the sale of 1,000,000 gallons by an Oklahoma refiner. The demand for kerosene in North Louisiana and Arkansas has been good recently, according to reports from those regions. The approach of cold weather, coupled with the big Oklahoma order, is expected to do much to strengthen the sale of kerosene for Group 3 refineries. This product is one of the few which showed no advance in price during the past week.

Reports from Cosden & Co. indicate that shipments over November will probably show it as the second largest month of the present year, judged from the standpoint of volume of business in all products. With practically no gasoline in storage, this plant is said to be refining about 30,000 bbls. of oil daily, with all of the refined products derived therefrom applied upon immediate shipments. Storage of gasoline at the West Tulsa refinery of this company is said to be less than 4,000,000 gallons of all grades at the present time. As an additional item of interest concerning the lack of gasoline in storage on the part of other refiners, marketers are reporting that one Group 3 refiner turned down a substantial order on 64-66, 375 end point gasoline for domestic consumption, for which 10½ cents had been offered.

Refiners were considering the reports on gasoline consumption, made public during the week, in which the gasoline consumption in 21 States during the 9 months of 1924 ending September 30, was fixed at 1,648,889,966 gallons, with a consumption of 1,349,525,412 gallons in the same States during the same months of 1923. This is an increase during the year of 299,364,554 gallons or 22.2 per cent. This figure compares favorably to the showing of the September consumption figures in the same States, which fixed the increase in that month at 20.6 per cent. A comparison of the consumption in 30 States during September, 1923, and September, 1924, showed an increase of 22 per cent during the year, with the consumption in September, 1924 only slightly below that of August, 1924. Present indications point to additional information of a satisfactory character in showing a heavy increase in motor fuel in 1924.

Refiners were considering the report of the American Petroleum Institute which showed a reduction of 1,417,014 bbls. in the gasoline stocks on hand at the refineries of the United States during October. This report was in the nature of a surprise to many students of the market and formed additional food for reflection in considering the probable trend of prices during the latter part of 1924 and the early part of 1925.

Scarcity of Blends

The discussion of the market factors affecting gasolines may be applied with reservation to the other refined products in Group 3. Naphtha prices advanced in line with gasolines and natural gasolines. Naphtha manufacturers were scarce and secured a good price for their product. The growing scarcity of blends was one of the new factors affecting the market. A canvas of the Oklahoma Field found but a half-dozen makers of blended gasolines. In only few instances do these blenders have materials available for the spot market as they are usually connected with a string of service stations, either

(Continued on Page 30)

REFINED MARKET BAROMETER

Demand for motor fuels continued to lead all developments east of the Rocky Mountains. In California, the market was dull, with no subtantial changes. Trading in all products there, showed effects of winter inactivity. In Chicago and Atlantic Coast areas, demand for gasolines continued brisk regardless of several days of freezing weather and light snows. Rocky Mountain area was affected like California, with prices generally softer. Southern States showed exceptional demand for motor fuels. Crude prices remained stationary with predictions of early advance in Mid-Continent grades. Tank wagon changes in New England and Tulsa reflected stronger tone in crude as well as refined. Fuel oils continue strong. Kerosene generally weak, with distillates reflecting slightly increased interest. Natural gasolines and blends strong. Lubricating oils generally stronger, particularly Gulf Coast zeros and Pennsylvania cylinder stocks. Wax increasingly scarce.

Mid-Continent—Continued demand for all grades of motor fuel causes advance of ¼ cent to ½ cent. Refiners hesitate to quote prices for December deliveries, confining themselves to first 10 to 15 days. Many refiners oversold. Big buyers unable to secure requirements. Heavy gasoline shipments continue, with Canadian buyers taking considerable high gravity. Shortage of U. S. Motor gasoline and export grades. Refiners forced to buy gasoline for own service stations. Gulf Refining Company makes large purchase of U. S. Motor. Refiners anticipate crude advance and general revision of tank wagon prices. Kerosene aided by sale of 1,000,000 gallons. Figures show increased gasoline consumption during 1924, and reduction in gasoline stocks during October. Naphthas and blends scarce. Natural gasoline advance. Fuel oil firm. Distillates arouse more interest with colder weather. Gas oil unchanged. Neutrals weak due to competition from Gulf Coast zeros. Steam refined cylinder stocks firm and bright stocks strong. Wax shortage continues.

Chicago—Business brisk. Gasoline consumption surprising. Buyers anticipate higher prices for crude and refined products. U. S. Motor gasoline selling for 8 cents. Higher gravity gasolines bring better prices as winter demand increases. Demand for blends good. Natural gasolines strong. Kerosene and distillates quiet. Fuel oil strong with shortage. Gas oil slightly firmer. Lubricants inactive except for zero cold test oils. Tank wagon markets steady.

Atlantic Seaboard—Improved conditions but caution advised. Favorable weather boosts consumption. Withdrawal of stocks anticipated for November. Price cutting gradually eliminated. Additional advances in gasoline tank wagon structure anticipated. Kerosene firm. Fuel oil situation unchanged, with demand heavy. Diesel engine oil demand heavy. Eastern refiners have not met advances in lubricants reported from Gulf Coast and Pennsylvania. Spindle oils and cylinder stocks leading. Export business continues at sharp pace.

Pennsylvania—Crude oil situation affects refining industry. Producers hold to credit balances for higher prices. Pipe lines unable to turn normal supply of crude to refiners, many of whom are operating under 50 per cent capacity. Refiners unable to meet demand for some products. Gasolines stronger, with movement good. Kerosene weaker. Fuel oil shows advance. Cylinder stocks scarce. Neutrals little change. Wax scarce and strong.

Gulf Coast—Pale, red and filtered lubricating stocks unchanged in price. Demand strong, some marketers sold up to January 1, 1925. Fuel oil particularly strong. Gas oil shows little change.

California—Market dull with gasoline consumption slumping. Prices stationary except absorption gasoline which dropped off ½ cent. Decline in production expected to bring about decrease in stocks of crude and stiffening of refined prices. Trading in refined products reflect generally dull situation.

Papoose Pool May Rival Cromwell

More Than 50 Rigs Up and Wells Drilling on All Sides of a Line of Gushers a Mile and a Quarter Long

By C. D. Lockwood

Seldom does an oil field having a daily average output of better than 25,000 bbls. slip up on the industry as quietly as the Papoose Pool in northern Hughes and southern Okfuskee counties has entered the list of major fields. Attention was called to the impending menace of that area in The Oil and Gas Journal for October 23, but now with the predictions contained in that article already practically realized; with wells ranging from 1,500 bbls. to 3,500 bbls. stretching out in the northeast extension for more than a mile; with hundreds of acres of territory not only uncondemned but virtually proven; with more than 50 rigs up or wells drilling in addition to the producers already in; and with scores of locations staked and certain to be drilled as rapidly as conditions permit, the Papoose Field presents one of the most serious problems of the hour and threatens to develop into an area that may possibly exceed the celebrated and widely advertised Cromwell Pool.

In a way, it has caught the industry unawares, perhaps because it has lingered so long in a minor role with an output of 5,000 to 7,000 bbls. and also because it attained the unenviable reputation of being located in "freakish" territory with only a few feet of pay sand and with a constant water menace, steep dips and about all other disadvantages that a pool can have.

The discovery well, however, which was drilled in July of 1923 by the Papoose Oil Co. in the SE cor. SW of Section 4-9-9, is now known to be on the extreme southwestern edge of the main pool and the chances are that if this well had been drilled one location farther west, the pool might not have been discovered yet.

Producing Area Extended

The real discovery of the main pool resulted from the drilling of T. B. Slick Bott & Witmer's No. 1 Sand, located in the SW cor. SE of Section 35-10-9, which topped the sand at 3,330 feet about the tenth of August. This gusher made as high as 3,500 bbls. and was still averaging around 2,500 bbls. daily last week. Now, the producing area has been extended another quarter of a mile eastward by the Independent Oil & Gas Co. in No. 1 S. Alexander, which topped the sand at 3,344 feet and when drilled in 70 feet started at 110 bbls. the first hour. The same company likewise extended production a quarter of a mile south of the Slick well with its No. 2 I. Alexander, whicvh came in last Friday for 60 bbls. hourly from sand at 3,332-42 feet. No. 1 on this lease was a 2,400-bbl. well from sand at 3,329-36 feet.

Then the Prairie Oil & Gas Co. drilled in its No. 1 Westbrook a quarter of a mile north of the Slick gusher, and found 150 bbls. an hour from sand at 3,314-31 feet, although McMahon & Carpenter had completed a dry hole in the SE cor. NW of the same section, as shown on the accompanying map. This duster got the top of the lime at 3,375 feet and picked up a hole full of water at 3,379-85 feet, showing a steep dip from the present high well in Section 3-9-9.

A well that worried some of the operators for a time was the Kingwood Oil Co.'s No. 1 Hamilton, the west offset to the Slick producer in Section 35-10-9. This well found the sand in the proper place at 3,311 feet, but extremely hard and drilled in 20 feet, the production amounting to only 208 bbls. After shooting it with 3, 5 and 7 quarts, however, the formation was loosened up and the output jumped to 37½ bbls. an hour.

Significant Conditions

The significant conditions in this field are being studied in conjunction with the foregoing facts to determine the problematical future importance of the Papoose Pool. In the first place, while the field is just about 6 miles southeast of the Cromwell Pool and is producing from the same sand, the Lyons, according to the correlations of most geologists, the producing horizon in the Papoose sector contains about 30 per cent greater saturation and the sand is more free from lime, than in the Cromwell Field. Studies made by one of the companies in the 10-8 district have convinced production officials that more of the Cromwell pay comes from just a few feet of real sand although the sand body averages more than 75 feet in thickness. It is cemented with lime for the most part and this fact accounts for the poor production on many of the

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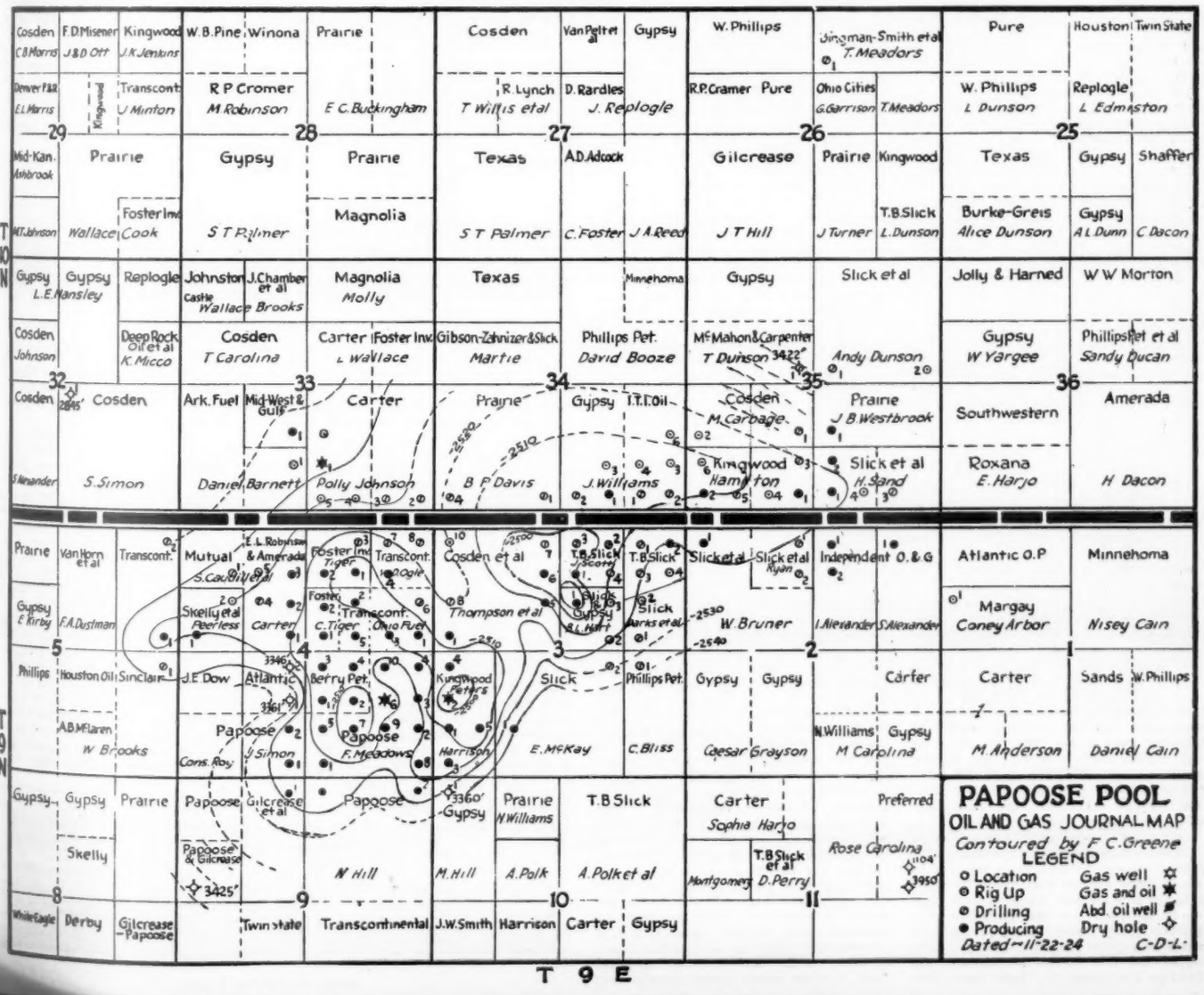


BurbankGasolineProductionProblems

Oil Pool Probably Better Handled From Standpoint of Gasoline Plants, It Is Said, Than Any Other Field Drilled

By F. E. Rice
Superintendent of Gasoline, Phillips Petroleum Co., before Bartlesville Engineers Club

The Burbank oil pool, from the standpoint of gasoline plants, was probably better handled in regard to the use of natural gas for gasoline and natural gas residue for fuel than any other oil field ever drilled. At the time the first oil wells were drilled tests were made by several of the major oil companies to see if the gas was suitable for the manufacture of natural gasoline. The first tests showed something better than one gallon and a large volume of gas per well. Of course, as soon as very many wells were drilled the gasoline producers started to sign up gas contracts, and in a pool of this size, it is always a question who are going to build plants. The contracts proposed by oil companies were the same, that is, the gas was contracted for on what is known as either the Five Civilized Tribes contract or on a straight 33⅓ per cent royalty basis.

It would be real interesting history if all the conferences and deals proposed for gas were collected and written. Such a paper would reveal many meetings and plans made by the heads of the biggest Mid-Continent production companies. The small producer had very little chance, as all production was tightly held by the so-called major companies and, other things being equal, major companies would rather do business with themselves than small producers. In the first place their interests are so interlocked that it is good business to trade back and forth, and, in the next place, such business dealings are usually more satisfactory in that the big companies understand the situation better and are really more charitable if some point of dispute arises that requires settlement. The writer always gives the big company credit for knowing more about what is going on and besides companies that are buying gas from each other do not ask the other fellow to do the impossible, as they probably realize that down the road they might want something in return.

Sinclair Oil & Gas Co.'s plant.

Gypsy Oil Co.'s No. 2 plant.

Character of Plants

After the gas was contracted and the plant locations decided upon relative to the probable acreage that would be available for gas, the next question that came up in Burbank was the character of a gasoline plant. Most of the plants built were absorption gasoline plants. The Gypsy Oil Co., however, and later the Phillips Petroleum Co., built some compression gasoline plants in Burbank and I know the relative efficiencies of the Phillips Petroleum Co.'s compression plants will be of interest to the fraternity. We found that by compression to 300 pounds in midsummer and the best possible temperatures ordinarily obtained at plants, there was still left in the residue about one-half gallon of marketable gasoline. Cold winter weather greatly reduces the amount left in the residue at a compression plant. No test has yet been run at freezing temperature, but even at a temperature of around 40 degrees the one-half gallon remaining in the residue was reduced to about two-tenths, these results being obtained upon gas testing at the plant intake at about 1½ gallons. The Phillips Petroleum Co. has high pressure oil absorbers on all gas coming from its compression plants which practically take all the remaining gasoline out of it.

Capacity of Plants

After the character of the plants in Burbank was determined, the capacity was the next thing to be considered. Competition has been so keen in this field that all gas practically has been taken care of as fast as it was available. Another thing, the very fact that the leases have been sold in advance of production every 6 months and that the sand was running so regular allowed the gasoline plants in Burbank to be of much larger size than could have been built in any other similar pool, outside of the Osage Nation. It would have been appalling to think of the waste of gas there would have been around Burbank if the leases had been commercial leases and all been drilled up at once. It was apparent from the very first that the plant would have available a large amount of gas and that this gas would last a long time. The maximum size plant that one could build in a hurry was the limiting size that was built in the Burbank Field. Of course, there are plants there which were limited by the available gas, but, for instance, the Phillips Petroleum Co., the Gypsy Oil Co. and the Skelly Oil Co. all have more than one plant, and, of course, if one can build a large unit that is not unwieldy its operating cost is less than one of smaller size. In this conjunction, it is interesting to note that no gasoline manufacturer in the Mid-Continent field has built a plant which would handle over 20,000,000 feet of gas per 24 hours. At the present time there are 12 gasoline plants in the Burbank oil pool which have a total production of about 225,000 gallons of gasoline net. This production is about 10 per cent of the total amount of natural gasoline produced in the United States, and has all developed from nothing up to its present magnitude in about 2½ years.

Production Curve

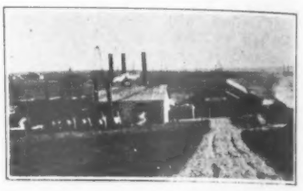
A production curve made up from the beginning will be of little value for the reason that there have been new wells on new leases added continuously. However, I am able to give you some decline curves on individual leases which show that the gasoline production is holding fairly constant, although the gas volume has fallen off considerably. Along this connection the average leases in the old part of the field has increased in richness from one gallon up to 2 gallons per thousand cubic feet. This increase has taken place almost entirely after the wells were cleaned out, put to pumping and the gasoline plants tied to the casingheads. Of course, this means that the wells which were originally held at atmospheric pressure have now probably 5 inches of vacuum at the casingheads. This vacuum is being held back by the producers and will probably be raised gradually during the next 3 or 4 years. Upon the application of a high amount of vacuum, that is above 20 inches, the gasoline content of the gas should show at least 5 gallons per thousand cubic feet and perhaps more.

Of course, the volume of gas will be very materially reduced and there is no doubt that the total production will be somewhat lower than now. No particular problems have arisen in Burbank in conjunction with the manufacture of gasoline. The product is an average one, showing a gravity better than 80 and of course is sour. Most of the Burbank plants are treating gasoline and are making a grade "A" product that is doctor sweet and noncorrosive. Phillips Petroleum Co., in making doctor sweet gasoline, has done considerable experimenting with the hypochlorite process and is now using a combination caustic and chlorine gas wash.

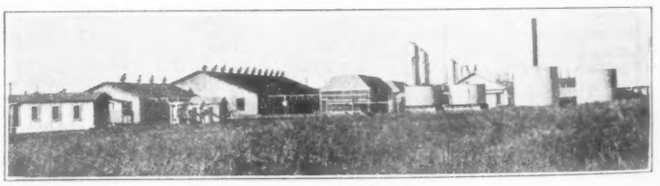
Water Problem Solved

The Burbank oil field finally assumed such large proportions that two railroad companies thought it worth while to build branch lines to the field, the Santa Fe coming from the west and the Midland Valley from the east. When one considers the average freight of one car of gasoline amounts to $250 per car and that there are from 20 to 25 cars a day shipped from this field, one can readily see why the railroad companies were willing to build these new branch lines.

Water has been one problem at Burbank, which as soon as the next hard rains occurs, will be permanentaly solved. The Carter Oil Co. went to the Arkansas River, sunk water wells and had a fair filtered water. However, it was so hard that the company finally put in a complete water softening plant in conjunction with its water station. Phillips Petroleum Co., supplying a large amount of water, first obtained water from local streams, but, as usually happens, these streams became polluted with salt water which makes it unfit for plant usage, The situation was so serious that a reservoir of about 10,000,000 bbls. capacity was built with 12 square miles of drainage area that should supply adequate fresh water for all the needs of the Burbank Field, either for Phillips Petroleum Co. or others.



Gypsy's No. 1 plant.



Carter Oil Co.'s plant.

Gas Volume and Output

Some figures may be of interest: There are approximately 30 sections of producing territory in Burbank which means nearly 2,000 oil wells. The gasoline plants have a combined capacity of about 150,000,000 feet per day. It is estimated that by January 1 the volume of gas available will be considerably less than this and of course from then on the plants will not be operating on full capacity basis. However, this should not affect the production, and, as a matter of fact, increased efficiencies and enriched yield from the gas will hold production for at least one year. At present there is about $11,000,000 invested in gasoline plants in the Burbank Field, or around $50 per gallon. Figuring 20 per cent depreciation and 8 per cent interest on this money it means that every gallon of gaso-

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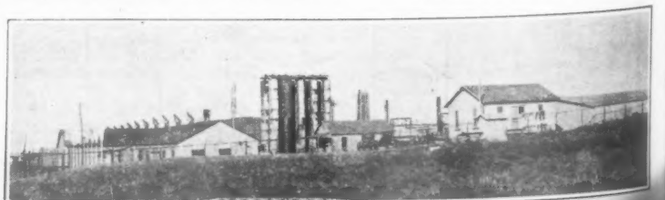
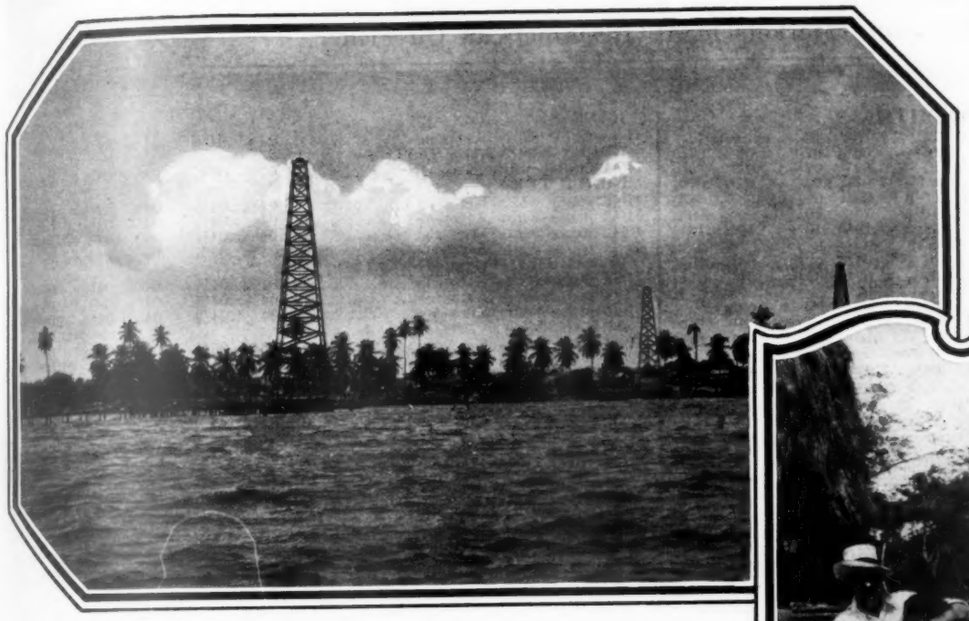


Skelly Oil Co.'s No. 1 plant.



Moore drilling derricks in La Rosa Field, on Lake Maracaibo, Venezuela. Well on left making 4500 bbls.

Another kind of "petting party." Mr. C. W. Hamilton, well known American oil man, in intimate conversation with one of his Venezuelan friends. (We are sure the Madam will not object.)

They "Come High" in Venezuela

112-Foot Moore Derricks
4500-barrel Well

In Venezuela fields, as elsewhere, wherever you go the familiar sight of Moore derricks greets the eye. Scores of these large and powerful drilling derricks are in use in these fields, and more are constantly being added, proving the truth of the saying that nothing succeeds like success.

The two derricks above are 112-foot Moore Combination drillers, in La Rosa field on Lake Maracaibo. The one on left is making 4500 bbls. The one in center is now drilling.

Proof against wind, fire, rot, and insects, Moore derricks render invaluable service in safeguarding production and heavy drilling investments.

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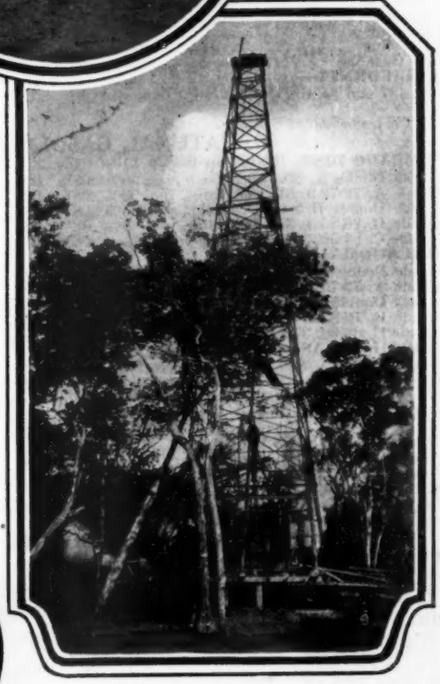


Another 112-foot Moore Driller. In Irara Field, near Maracaibo, Venezuela.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Nov. 25		Nov. 18		Nov. 11	
50-52 450 end point (Naphtha)	.07	.07¼	.06¾	.07	.06¾	.07
56-58 450 end point	.07½	.07¾	.07	.07¼	.07¼	
58-60 437 end point (U. S. Motor)	.08	.08¼	.07½	.07¾	.07½	.07¾
60-62 400 end point	.09¼	.09½	.09	.09¼	.08½	.08¾
64-66 375 end point	.10¼	.10½	.10	.10¼	.09½	.09¾
68-70 360 end point	.10¾	.11	.10½	.10¾	.10¼	.10½
OKLAHOMA (Group 3)—						
50-52 450 end point	.07	.07¼	.07	.07¼	.06½	.06¾
56-58 450 end point	.07½	.07¾	.07¼	.07½	.07	.07¼
58-60 437 end point (U. S. Motor)	.07¾	.08	.07¾		.07½	.07¾
60-62 400 end point	.09	.09¼	.09		.08¾	
64-66 375 end point	.10¼	.10½	.10		.09¾	
68-70 350 end point	.10¾	.11	.10½	.10¾	.10¼	.10½
KANSAS—						
58-60 437 end point (U. S. Motor)	.08	.08¼	.07¾	.08	.07½	.07¾
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.07¼		.07		.06¾	.07
50-52 440 end point (Naphtha)	.07⅝	.07⅝	.07	.07¼	.07	
56-58 450 end point	.07¾		.07¼	.07½	.07	.07¼
58-60 437 end point (U. S. Motor)	.08		.07¾		.07½	
60-62 400 end point	.09¼	.09½	.09		.08¾	
64-66 390 end point	.10¼		.09½	.09¾	.09¼	.09½
64-66 375 end point	.10½		.09¾	.10	.09½	.09¾
68-70 360 end point	.10¾	.11	.10½		.10	.10¼
NORTH LOUISIANA—						
56-58 450 end point	.08¼	.08½	.08	.08¼	.07½	.07¾
58-60 437 end point (U. S. Motor)	.08½	.08¾	.08¼	.08⅝	.07¾	.08
60-62 400 end point	.09¾	.10	.09¼	.09½	.09¼	
64-66 390 end point	.10¼	.10½	.10	.10¼	.09½	.09¾
64-66 375 end point	.10½	.10¾	.10¼	.10½	.09¾	
ARKANSAS—						
58-60 450 end point	.08½	.08¾	.08¼	.08½	.07½	.07¾
58-60 437 end point (U. S. Motor)	.08¾	.09	.08½	.08⅝	.07¾	.08
64-66 375 end point	.10¾		.10½		.09¾	
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.10¼	.10½	.10½	.10¾	.10½	.10¾
PENNSYLVANIA—						
52 Naphtha	.10¼		.09¼		.09¼	
54 Naphtha	.10½		.09¾		.09¾	
56 Gasoline	.10½		.10		.10	
58 Gasoline	.11		.10½		.10½	
60 Gasoline	.11⅝		.11¾		.11¼	
62 Gasoline	.12½		.12½		.12	
64 Gasoline	.14½		.14½		.13½	
66 Gasoline	.15¼		.15¼		.15¼	
68-70 Gasoline	.16½		.17		.17	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.09	.09½	.09	.09½	.09	.09½

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Nov. 25		Nov. 18		Nov. 11	
⌈Grade Double A, 80-87.9 375 e.p., rec. 90%	.08¾	.09	.08¾		.08¼	.08½
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.08¾	.09	.08¾		.08¼	.08½
⌈Grade Double B, 84-92, 375 e.p., rec. 85%	.08½	.08¾	.08½	.08⅝	.08	.08¼
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08½	.08¾	.08½	.08⅝	.08	.08¼
Grade C, 80-90, 375 end point, rec. 78%	.08¼	.08½	.08	.08¼	.07½	.07¾
OKLAHOMA (Group 3)—						
⌈Grade Double A, 80-87.9, 375 e.p., rec. 90%	.08¾	.09	.08½	.08¾	.08½	
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.08¾	.09	.08½	.08¾	.08½	
⌈Grade Double B, 84-92, 375 e.p., rec. 85%	.08½	.08¾	.08¼		.08	.08¼
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08½	.08¾	.08¼		.08	.08¼
Grade C, 80-90, 375 end point, rec. 78%	.08¼	.08½	.08		.07¾	
NORTH TEXAS—						
⌈Grade Double A, 80-87.9, 375 e.p., rec. 90%	.08¾	.09	.08½		.08½	
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.08¾	.09	.08½		.08½	
⌈Grade Double B, 84-92, 375 e.p., rec. 85%	.08½	.08¾	.08¼		.08	.08¼
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08½	.08¾	.08¼		.08	.08¼
Grade C, 80-90, 375 end point, rec. 78%	.08¼	.08½	.08		.07½	.07¾
NORTH LOUISIANA—						
Grade B, 76-83.9, 375 end point, rec. 85%	.07¾	.08	.07¾	.08	.08½	
Grade C, 76-82, 375 end point, rec. 85%	.07¼	.07½	.07¼	.07½	.07½	.07¾
CALIFORNIA—						
68-80 absorption, 360-390 end point	.10	.10½	.10½	.11	.10½	.11
78-84 compression, 350 end point	.10		.10		.10	

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Nov. 25		Nov. 18		Nov. 11	
60-62 450 end point	.07¾	.08	.07¾	.08	.07¼	.07½
64-66 450 end point	.07¾	.08	.07¾	.08	.07½	.07¾
68-70 437 end point	.08	.08¼	.08	.08¼	.07½	.07¾
OKLAHOMA (Group 3)—						
60-62 450 end point	.07⅝	.07¾	.07¾		.07½	
64-66 437 end point	.07¾	.08	.08		.07½	.07¾
68-70 430-435 end point	.08	.08¼	.08	.08¼	.07½	.07¾
NORTH TEXAS—						
58-62 440 end point	.07⅝	.07⅞	.07¾	.08	.07½	.07¾
58-60 450 end point	.07⅝	.07⅞	.07¾	.08	.07½	.07¾
PENNSYLVANIA—						
*60-62	.12½		.12		.12	
*64-66	.12½		.12		.12	
*66-68	.12½		.12		.12	
*68-70	.12½		.12		.12	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Nov. 25		Nov. 18		Nov. 11	
41-43 water white Kerosene	.04⅜	.04½	.04⅜	.04⅝		
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05	.05¼	.04¾	.05	.04⅝	.04¾
42-44 water white Kerosene	.05¼	.05½	.05	.05¼	.04¾	.05
KANSAS—						
41-43 water white Kerosene	.04⅝	.04⅞	.04⅝	.04⅞	.04⅝	.04⅞
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07½	.07¾	.08	.08¼	.08	.08¼
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¾	.04⅝
41-43 prime white Kerosene	.04	.04¼	.04⅛	.04¼	.04¼	.04½
40-42 prime white Kerosene	.04	.04¼	.04⅛	.04¼	.04¼	.04½
42-44 water white Kerosene	.04⅝	.04¾	.04⅝	.04¾	.04⅝	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04⅜	.04⅝
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04⅝	.04⅞
41-43 prime white Kerosene	.04	.04¼	.04	.04¼	.04⅛	.04¼
ARKANSAS—						
41-43 water white Kerosene	.05⅜	.05½	.05	.05¼	.04¾	.05
42-44 water white Kerosene	.05⅝	.05¾	.05½		.05	.05⅛
PENNSYLVANIA—						
43 Kerosene prime white	.07¼		.07¼		.07¼	
45 Kerosene water white	.07½		.07½		.07½	
46 Kerosene water white	.08		.08		.08	
47 Kerosene water white	.08¼		.08¼		.08¼	
34 Neutral	.09		.09		.09	
34 Sundebloomed Neutral	.07¾		.07¾		.07¾	
36 Miners' Neutral	.06½		.06½		.06½	
300 Mineral Seal	.07½		.07½		.07½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.06	.06½	.06	.06½	.06½	.07
Engine distillate, 42-44 480 end point	.05½	.05¾	.05½	.05¾	.06	.06¼

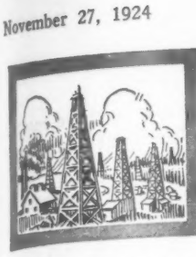
*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Nov. 25		Nov. 18		Nov. 11	
24-26 Fuel Oil (sellers' cars Group 3)	1.07½	1.10	1.05	1.10	1.00	1.05
22-24 (El Dorado)	1.05	1.07½	1.05	1.10	1.00	1.05
18-20 (Smackover)	1.00	1.05	1.05	1.10	1.00	
32-36 Gas Oil	.02⅞	.03	.02⅞	.03⅛	.02⅛	.03
36-38 Distillate	.03½	.03¾	.03½	.03¾		
38-40 Straw distillate	.03¾	.04	.03¾	.04	.03⅜	.03⅝
KANSAS—						
24-26 Fuel Oil	1.15	1.20	1.17½	1.20	1.10	1.15
32-36 Gas Oil	.03	.03⅛	.03	.03⅛	.03	.03⅛
38-40 Distillate	.03¾	.04	.03¾	.04	.03⅜	.04
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	1.05		1.02½	1.05	1.00	
24-26 Fuel Oil (buyers' cars)	1.05		1.05		1.00	
24-26 Fuel Oil (sellers' cars)	1.05	1.07½	1.05	1.07½	1.00	1.05
28-30 Fuel Oil (sellers' cars)	1.15	1.20	1.15		1.10	1.15
32-36 Gas Oil	.02⅞	.03	.02⅞	.03	.02¾	.03
38-40 Straw distillate	.03½	.03¾	.03½	.03¾	.03½	.03⅜
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.05	1.07½	1.05	1.10	.95	1.00
26-30 Fuel Oil	1.12½	1.15	1.15		1.05	1.10
32-36 Gas Oil	.02⅞	.03	.02¾	.02⅞	.02¾	.02¾
36-38 Gas Oil	.03	.03⅛	.03	.03⅛	.03	.03¼
38-40 Straw distillate	.03¼	.03½	.03⅜	.03½	.03½	.03⅝
NORTH LOUISIANA—						
18-20 Fuel Oil	1.00	1.05	.95	1.00	1.00	1.05
24-26 Fuel Oil	1.05	1.10	1.00	1.05		
32-36 Gas Oil	.03¼	.03½	.03¼	.03½	.03⅛	.03¼
ARKANSAS—						
38-40 Distillate	.03½	.03¾	.03½	.03¾	.03¾	.04
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
22-26 Refinery Fuel Oil	1.05	1.10	1.05		1.00	
GULF COAST (South Texas)—						
Gas Oil	.04½	.05	.04½	.05	.04½	.05
Fuel Oil	1.60	1.70	1.60	1.70	1.50	1.60
PENNSYLVANIA—						
30-34 Fuel Oil	.05½		.05		.05	
36-40 Fuel Oil	.05¾		.05¼		.05¼	
CALIFORNIA—						
33-36 Distillate	.04	.04½	.04	.04½	.04	.04½
27-33 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
15-20 Fuel Oil (at tide water)	1.40		1.40		1.40	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
70-80 vis., 2½ color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
100 vis., 2 color, 20-25 cold test	.04½	.05	.04½	.05	.04½	.05
100 vis., 3 color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
150 vis., 3 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 4 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
180 vis., 4 color, 23-28 cold test	.08	.08½	.08	.08½	.08	.08½
180 vis., 3 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
200 vis., 3 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 4 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
220 vis., 3 color, 25-30 cold test	.11½	.12	.11½	.12	.11½	.12
220 vis., 4 color, 25-30 cold test	.10¾	.11½	.10¾	.11½	.10¾	.11½
240 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13¼
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.07½	.08	.07½	.08	.07½	.08
180 vis., 6 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12½	.12¾
200 vis., 5 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
200 vis., 6 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 5 color, 25-30 cold test	.10	.10½	.10	.10½	.10	.10½
220 vis., 6 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
240 vis., 5 color, 25-30 cold test	.12	.12½	.12	.12½	.12	.12½
240 vis., 6 color, 25-30 cold test	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
280 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
180-200 vis., S. R. green, 40-45 cold test	.07	.07¼	.07	.07¼	.07	.07¼
190-200 dark green, 40-45 cold test	.06	.06½	.06	.06½	.06	.06¾



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

170-190 dark green, 40-45 cold test	.05¾	.06	.05¾	.06	.05¾	.06
600, E filtered	.20	.21	.20	.21	.20	.21
190-200 vis. @ 210 "D" Bright Stock	.34		.34		.34	
200-210 vis. @ 210 "E" Bright Stock	.29		.29		.29	
150 vis. @ 210 "D" Bright Stock	.30		.30		.30	
150 vis. @ 210 "E" Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Ccale Wax	.05	.05⅛	.04⅞	.05⅛	.04¾	.05
PENNSYLVANIA—						
150, 3 color	.17½		.17		.17	
180, 3 color	.19½		.19½		.19	
200, 3 color	.22½		.21½		.21½	
220, 3 color	.22		.22		.23	
600, steam refined	.21		.19¼		.19¼	
625, steam refined	.25		.25		.24	
650, steam refined	.27		.26¼		.25¾	
600, Pennsylvania flash	.30		.30		.29	
650, Pennsylvania flash	.38		.36		.36	
*550, E filtered	.19¼		.19¼		.19¼	
*600, E filtered	.22¾		.22		.22	
600, E filtered	.22½		.22½		.22½	
600, D filtered	.30		.28		.28	
550, E filtered	.20		.20		.20	
550, D filtered	.24		.24		.24	
Pennsylvania Bright Stock	.36		.36		.36	
†122-124 White Crude Scale Wax	.05⅝		.05⅝		.05⅝	
†122-124 White Crude Scale Wax	.05½		.05½		.05½	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06½	.07	.06½	.07	.06½	.07
No. 2 color, 100 vis., pale oil	.09½	.10½	.09½	.10½	.09½	.10½
No. 2 color, 150 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3 color, 200 vis., pale oil	.13½	.14½	.13½	.14½	.13½	.14½
No. 3 color, 300 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 500 vis., pale oil	.18	.19	.18	.19	.18	.19
No. 3½ color, 750 vis., pale oil	.23½	.24½	.23½	.24½	.23½	.24½
No. 4½ color, 1200 vis., pale oil	.25½	.26½	.25½	.26½	.25½	.26½
No. 4½ color, 2000 vis., pale oil	.30½	.31½	.30½	.31½	.30½	.31½
No. 2 color, 150 vis., pale filtered	.20½		.20½			
No. 2 plus color, 200 vis., pale filtered	.22		.22			
No. 2½ minus color, 300 vis., pale filtered	.25½		.25½			
No. 2½ color, 500 vis., pale filtered	.29½		.29½			
No. 2½ color, 750 vis., filtered	.39½		.39½			
No. 5 to 6 color, 200 vis., red oil	.12	.13	.12	.13	.12	.13
No. 5 to 6 color, 300 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 5 to 6 color, 500 vis., red oil	.16	.17	.16	.17	.16	.17
No. 5 to 6 color, 750 vis., red oil	.20½	.21½	.20½	.21½	.20½	.21½
CALIFORNIA—						
200 vis., 2½-3 color	.15	.16	.15	.16	.15	.16
300 vis., 2 -4 color	.15	.17	.15	.17	.15	.17
350 vis., 3½-4 color	.17½	.18½	.17½	.18½	.17½	.18½
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.13	.14
300 vis., 5 -6 color	.14	.16	.14	.16	.14	.16
400 vis., 5 -6 color	.16	.17	.16	.17	.16	.17
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis., 9½ plus color	.18	.19	.18	.19	.18	.19

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Nov. 25	Nov. 18	Nov. 11
U. S. Motor Gasoline, 58-60 437	.12	.12	.11¾
*Bunker Oil, 14-16 Be.	1.80	1.75	1.75
Diesel Oil, 28-30 Be.	2.00	2.00	2.00
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.05	.05	.05
41-43 Kerosene prime white	.08⅝	.08⅝	.09

*Lighterage 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Nov. 25	Nov. 18	Nov. 11
Motor Gasoline:			
58-60 Be. gravity, in cases	.26.40	.26.40	.26.40
U. S. Navy, in bulk	.12¼	.12¼	.12¼
Naphtha:			
60° F., 59-61 Be. gravity, in bulk	.13¼	.13¼	.13¼
60° F., 63-66 Be. gravity, in bulk	.14½	.13½	.14½
60° F., 66-68 Be. gravity, in bulk	.16	.16	.16
Kerosene:			
Standard white, 40-42 Be. grav., in bulk	.06½	.06½	.06½
Standard white, 40-42 Be. grav., in barrels	.13½	.13½	.13½
Standard white, 40-42 Be. grav., in cases	.16.9	.16.9	.16.9
Water white, 42-44 Be. grav., in bulk	.07½	.07½	.07½
Water white, 42-44 Be. grav., in barrels	.14½	.14½	.14½
Water white, 42-44 Be. grav., in cases	.17.9	.17.9	.17.9
Lubricating Oils:			
Cylinder Stock, extra light filtered, 600, in barrels	.44½	.44½	.44½
Cylinder Stock, light filtered, 600, in barrels	.38½	.38½	.38½
No. 5 Bright Stock, .897 spec. grav.	.48½	.48½	.48½
No. 1 white neutral, .878 spec. grav.	.43	.43	.43
No. 1 Summer Black, .895 spec. grav.	.12	.12	.12
Special "A" red oil, .897 spec. grav., 170 vis.	.21	.21	.21
No. 2 red oil, .903 spec. grav., 212 vis.	.22	.22	.22
No. 1 red oil, .905 spec. grav., 265 vis.	.23	.23	.23
Polar red oil, .906 spec. grav., 295 vis.	.25	.25	.25
Pale oil, "25", .899 spec. grav.	.19½	.19½	.19½
Pale oil, "28", .892 spec. grav.	.16	.16	.16
Paraffin Wax:			
120-122 a.m.p., per lb.	.06	.06	.06
125-127 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07¼	.07¼	.07¼

LOS ANGELES EXPORT PRICES

	Nov. 25		Nov. 18		Nov. 11	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor gasoline, 54-56, 437 end point	.08½	.09	.08½	.09	.08½	.09

CRUDE OIL PRICES

October 27.—Standard Oil Co. of Louisiana advanced Cotton Valley crude 15 cents.

November 6.—Major purchasing companies advanced Grade "A" Gulf Coast crude 25 cents and Grade "B" 20 cents. Indian Refining Co. advanced Western Kentucky crudes 10 cents.

November 12.—Standard Oil Co. of Louisiana advanced Bellevue crude 25 cents.

Arkansas and North Louisiana

Caddo, 38° and above	$1.35
35° to 37.9°	1.25
32° to 34.9°	1.15
Below 32°	1.00
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.00
Below 33°	.90
Bull Bayou, 38° and above	1.15
35° to 37.9°	1.00
32° to 34.9°	.85
Cotton Valley	.95
De Soto	1.20
Crichton	1.00
Bellevue	1.35
Smackover, 25° and above	.95
Below 25°	.85
*Stephens, Ark.:	
26° and above	.90
Below 26°	.70

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .95
Salt Creek	.85
Big Muddy	.75
Mule Creek	.60
Grass Creek (light)	1.20
Elk Basin	1.20
Lance Creek	1.15
Osage	1.15
Cat Creek (Mont.)	1.20
Sunburst (Mont.)	.90
Lost Soldier	.78
Greybull and Torchlight	1.15
Hamilton Dome	.80

Lander based on contracts covering entire production of fields.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	$ .75
30° to 32.9°	.90
33° to 35.9°	1.10
36° and above	1.25
Magnolia Petroleum Co.:	
*33° and above	1.25
Corsicana Light	1.25
Corsicana Heavy	.90
Mexia	1.25
Powell	1.25
Thrall	1.00

*Below 33° gravity, same as Prairie.

Humble Oil & Refining Co.

Ranger:	
Below 30°	$ .90
30° to 32.9°	1.10
33° to 35.9°	1.25
36° and above	1.35
Mexia	1.25
Powell	1.25
Currie	1.25
Richland	1.25

*Wichita-Archer Counties and Moran, same as Prairie.

Gulf Coast

†Grade "A"	$1.50
†Grade "B"	1.25
Luling	.90
Laredo (Magnolia Petroleum Co.)	.75
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.53
*High Island	.85

*Posted by Sun Co.

†Following are the specifications from Gulf Coast crudes as posted by Humble Oil & Refining Co.:

"Grade "A"—Viscosity—Not less than 100 seconds at 100° F. Saybolt sulphur—Not over .4% Baume gravity. Not over 25 at 60° F.

Cold test of distillates having viscosity of 1,000 seconds at 100° F., A. S. T. M. method.

Grade "B"—Embraces all coastal crude which does not meet the test for "A" Grade crude.

***Somerset**

26° and above	.95
Below 26°	.85

*Posted by Grayburg Oil Co.

California

14° to 19.9°	$1.00
20° to 20.9°	1.01
21° to 21.9°	1.02
22° to 22.9°	1.03
23° to 23.9°	1.05
24° to 24.9°	1.07
25° to 25.9°	1.10
26° to 26.9°	1.13
27° to 27.9°	1.16
28° to 28.9°	1.19
29° to 29.9°	1.22
30° to 30.9°	1.25
31° to 31.9°	1.28
32° to 32.9°	1.31
33° to 33.9°	1.34
34° to 34.9°	1.37
35° to 35.9°	1.40
36° to 36.9°	1.46
37° to 37.9°	1.52
38° to 38.9°	1.58
39° to 39.9°	1.64
40° to 40.9°	1.70
41° to 41.9°	1.76
42° and above	1.82

Eastern States

Penna Grade Oil in New York Transit Lines	$2.85
Bradford District Oil in National Transit Lines	2.85
Penna Grade Oil in National Transit Lines	2.75
Penna Grade Oil in Southwest Pa. Pipe Line Lines	2.75
Penna Grade Oil in Eureka Pipe Line Lines	2.75
Penna Grade Oil in Buckeye Pipe Line Lines	2.75
Cabell Grade Oil in Eureka Pipe Line Lines	1.45
Corning Grade Oil in Buckeye Pipe Line Lines	1.50
Somerset Medium Oil in Cumberland Pipe Line Lines	1.55
Somerscet Light Oil in Cumberland Pipe Line Lines	1.70
Ragland Grade Oil in Cumberland Pipe Line Lines	.90
Lima	1.58
Wooster	1.40
Illinois	1.37
Indiana	1.38
Princeton	1.37
Plymouth	.75
Waterloo	.75
†Oil Springs, Canada	2.30
†Petrolia, Canada	2.23
*Western Kentucky, 36° and above	1.30
*Western Kentucky, 33° to 35.9°	1.20
*Western Kentucky, 32.9° and below	1.10
Cumberland, Barren and Monroe Counties, (Kentucky) (Paragon Development Co.)	1.70

†Plus Government bounty of 26½c.

*Prices for Warren, Allen, Hancock, and Ohio Counties by Indian Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co., same as Indian Refining Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.15
†Panuco (f.o.b. Mexican ports)	.95
Tuxpam (New York)	1.72
Panuco (New York)	1.38

*Plus 32.33c. †Plus 17.64c tax. Prices based on contracts.

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.

President	Frank T. Lauinger
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30 Church Street, NEW YORK — 1328 Peoples Gas Bldg., CHICAGO, ILL.
PITTSBURGH, PA., 1003 Jones-Law Bldg.

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies	$ .15	One year (in United States)	$6.00
Three months	$2.00	One year (in Canada)	$7.00
Six months	$3.00	One year (foreign countries)	$7.00

ADVERTISING RATES ON APPLICATION
Telephones: 6291-6292-6293
Remittances by Checks, Drafts, Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
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MEMBER AUDIT BUREAU OF CIRCULATION

LOOK OUT FOR THE LEGISLATURES

The Legislatures of three-fourths of the 48 States will hold sessions in the coming year, most of them assembling in January. The oil industry will do well to be on guard.

Conservatism may be in control at Washington and radicalism relegated to the rear by the voters in the National election but there is no such assurance about the lawmaking bodies of the several States.

There may be and it is hoped will be a moderating influence from the emphatic expression of the popular mind in the Presidential and Congressional campaigns but experience has shown that local legislators have methods peculiarly their own.

Threats against business interests are a familiar feature of most State legislative sessions. Practically every large business interest has had experience of this kind. Some, like the railroads and the oil industry, have had them continually every time the Legislature is in session.

It is hardly to be expected that even so impressive and overwhelming a vote as that of November 4 can change this legislative habit. The local politicians will have no difficulty persuading themselves that the people were rebuking the national crowd, not them. It may be necessary for the voters of each State to have a house-cleaning campaign of their own to drive the lesson home.

Meanwhile the oil industry cannot afford to take anything for granted when the Legislatures assemble. There will in all probability be the usual flock of bills to tax, regulate and penalize the oil business on the assumption that it will win votes, or for less creditable motives.

It must not be forgotten that while the oil agitation at Washington gained most notoriety it was in the State Legislatures that antagonistic legislation was most successful.

Washington investigated and threatened but at the State capitals the threats were usually carried into execution, Governors putting the State into the oil business, Attorneys General pressing prosecutions and the lawmakers levying new imposts and adopting further restrictions.

One oil-baiting State executive has managed to reach the United States Senate, encouraging other aspirants to emulation and setting an example for State politicians to win easy fame and political promotion by harassing the oil business.

The fact that so far 35 of the State Legislatures have enacted gasoline taxes is significant of the general attitude of State Legislators towards the oil business.

Reports that many of the State lawmaking bodies assembling in January propose to levy a tax on gasoline or increase that already imposed show this tendency is spreading rather than otherwise.

With it usually goes a spirit of hostility to the oil industry, a disposition to place as many burdens on it as possible and a belief that this is the surest way to popular favor.

This is the frame of mind which the industry must take into account not in one body, as in Washington, but in practically every one of the three dozen State Legislatures about to convene.

It need not be urged that it will be a mistake to wait until the hostile legislation is under way or has been enacted. Oil men in each of these States should exert themselves to see that the members of the Legislatures are put in possession of the facts about the oil industry.

The business men of the States, through their trade associations, boards and chambers should be interested in the effect of the prospective legislation upon the industry which serves them and is an important factor in their trade and prosperity.

With the National vote against radicalism in view there should be less hesitation about opposing legislation aimed at legitimate industry, since it is plain the public is in the mood to hear the facts and less inclined to listen to demagogy.

The people have taken the measure of the disturbing element in our National politics and will be as prompt and effective in dealing with the local imitators if they are shown the way.

It is worthy of special notice that the most rabid agitation against the oil industry has been in the agricultural States. Yet if the farmers could be made to realize the analogy between the recent condition of their own business and that of the oil industry at present in the matter of overproduction they would see matters in a different light.

At the recent meeting of the National Grange at Atlantic City, representing, it was said, more than a million farmers, the Government was asked to furnish the necessary information to guide the farmers to a proposed nation-wide system of cooperative and balanced production that would "prevent crop shortages one year and a big surplus another."

The Grange even went so far as to adopt a resolution strongly urging the Government against any further irrigation or reclamation work by States or the Government in the Far West because "no artificial stimulation of agricultural production is either justifiable or desirable from the standpoint of the welfare of the Nation."

We can imagine what a clamor would be raised if the oil industry adopted a resolution for cooperative and balanced production and opposing extension of production.

Yet the oil industry has been suffering as severely as the agricultural industry from prices below costs because of overproduction. And instead of being encouraged and assisted to escape from that condition it has been denounced for not cutting prices still further under threat of legislative compulsion or executive competition.

Placing this comparison before the voters in the agricultural States where Legislatures meet this winter ought to start a backfire that would rout the most radical lawmakers.

The industry has an excellent case, appealing to the common sense of every thinking man and woman. The legislators who are counting on winning popularity by attacking it can only do so if the industry fails to inform the public.

The popular mind is in a receptive mood. These legislative sessions offer opportunity for educating the people if the industry is alert to deal with the situation.

A victory as decisive as that of November 4 can be won if action is taken at once. Do not wait to be attacked. Get the case before the people now.

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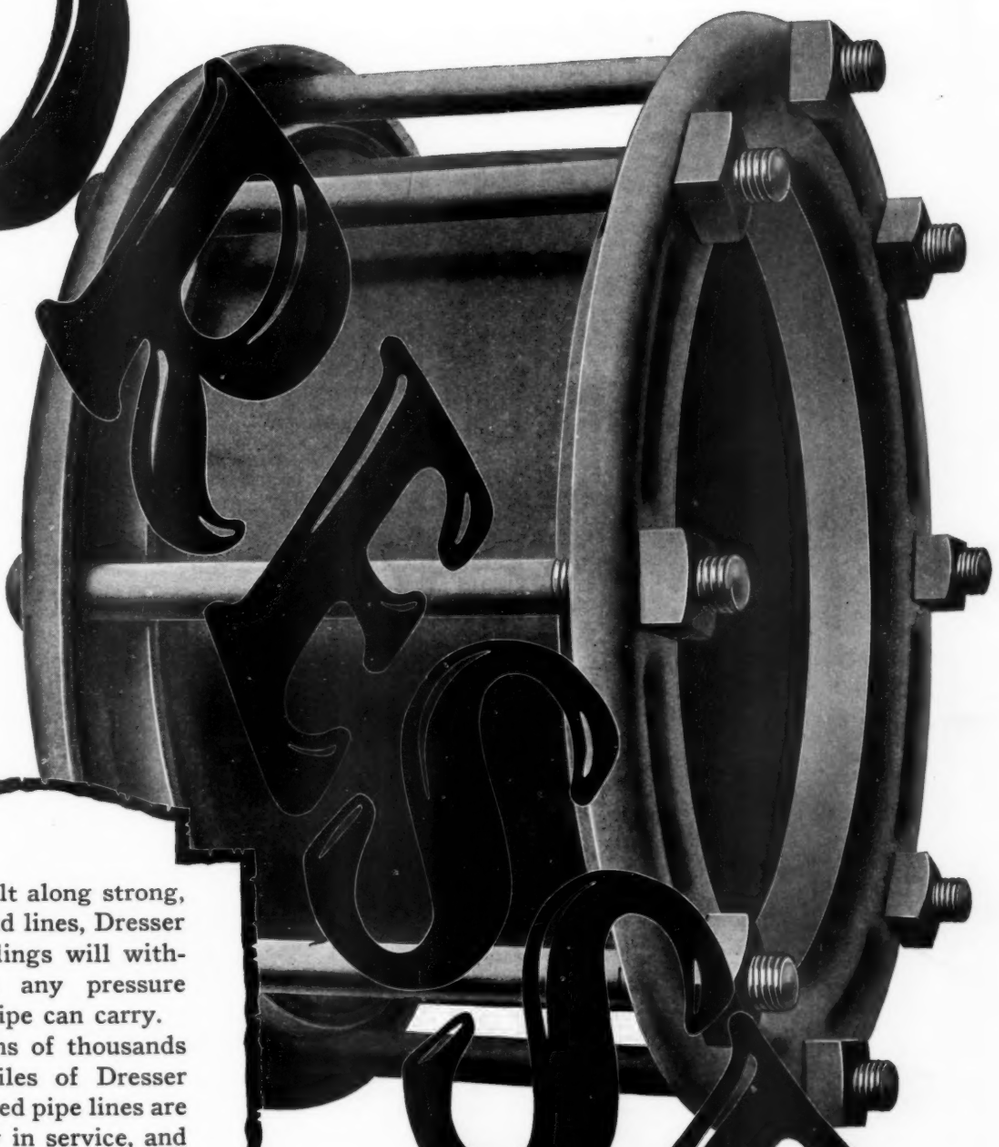

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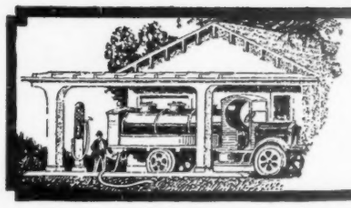


TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Nov. 25

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Chicago District—				
†100 gals. or more	13.0	...	16.0	11.0

Tank wagon prices on April 10, 1922; g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c.

Decatur, Ill.	13.2	...	16.2	11.5
East St. Louis	12.1	...	14.35	10.6
Joliet	13.4	...	15.4	11.7
Peoria	13.0	...	15.0	11.5
Quincy	13.2	...	15.2	11.3
Davenport, Ia.	13.5	...	15.5	11.9
Des Moines	13.5	...	15.5	11.9
Keokuk	13.5	...	15.5	11.9
Sioux City	13.0	...	15.0	11.5
Duluth, Minn.	14.5	...	16.5	12.6
Minneapolis	14.2	...	16.2	12.6
La Crosse, Wis.	14.2	...	16.2	12.4
Milwaukee	13.1	...	15.1	11.3
Madison	13.3	...	15.3	11.5
Detroit, Mich.	13.8	...	15.8	12.2
Grand Rapids	13.7	...	15.7	12.1
Saginaw	13.9	...	15.9	12.3
Evansville, Ind.	15.0	2.0	17.0	11.5
Fort Wayne	15.4	2.0	17.4	11.9
Indianapolis	15.2	2.0	17.2	11.7
South Bend	15.4	2.0	17.4	11.9
Fargo, N. D.	15.9	1.0	17.9	14.6
Huron, S. D.	17.0	2.0	19.0	13.1
Sioux Falls	15.0	2.0	17.0	12.6
*Kansas City, Mo.	13.9	1.0	15 9	10.3
Springfield	13.8	...	15.8	11.2
*St. Louis	12.6	0.5	14.9	11.0
*St. Joseph	13.0	0.5	15.0	10.9
Wichita, Kans.	12.8	...	14.8	9.8
Bartlesville, Okla.	14.4	...	16.4	9.9

*City tax.
†Tank wagon price on less than 100 gallons, 14c.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Newark, N. J.	13.5	...	....	13.0
Atlantic City	13.5	...	....	13.0
Annapolis, Md.	15.0	2.0	17.0	12.0
Baltimore	15.0	2.0	17.0	11.0
Cumberland	15.0	2.0	17.0	12.5
Washington, D. C.	16.0	2.0	18.0	12.5
Norfolk, Va.	17.0	3.0	19.0	13.5
Petersburg	17.0	3.0	19.0	13.5
Danville	17.0	3.0	19.0	13.0
Richmond	17.0	3.0	19.0	13.5
Roanoke	17.0	3.0	19.0	13.5
Keyser, W. Va.	15.0	2.0	....	13.5
Charleston	16.0	2.0	....	12.5
Parkersburg	16.0	2.0	....	13.5
Wheeling	16.0	2.0	....	13.5
Charlotte, N. C.	15.0	3.0	....	13.5
Hickory	15.0	3.0	....	13.5
Mt. Airy	15.0	3.0	....	13.5
Salisbury	15.0	3.0	....	13.5
Charleston, S. C.	15.5	3.0	....	14.0
Columbia	15.5	3.0	....	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Atlanta, Ga.	17.0	3.0	20.0	13.0
Augusta	17.0	3.0	20.0	13.5
Macon	17.0	3.0	20.0	14.5
Savannah	14.0	3.0	17.0	13.0
Birmingham, Ala.	15.0	2.0	18.0	14.5
Mobile	14.0	2.0	17.0	12.6
*Montgomery	16.0	3.0	19.0	15.5
Clarksdale, Miss	15.0	3.0	18.0	12.0
Jackson	15.0	3.0	18.0	10.0
Natchez	14.5	3.0	17.5	11.5
Vicksburg	14.5	3.0	17.5	11.5
Jacksonville, Fla	15.0	3.0	18.0	13.0
Miami	17.0	3.0	20.0	14.5
Pensacola	15.0	3.0	18.0	13.5
Tampa	15.0	3.0	18.0	13.0
Lexington, Ky.	16.0	3.0	19.0	14.0
Covington	15.0	3.0	18.0	14.0
Louisville	15.0	3.0	17.0	12.0

*In addition to State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
New Orleans, La.	13.5	2.0	15.5	9.0
Alexandria	14.5	2.0	16.5	13.0
Baton Rouge	13.0	2.0	15.6	11.5
Lake Charles	14.5	2.0	16.5	13.0
Shreveport	14.5	2.0	16.5	13.0
Memphis, Tenn.	14.0	2.0	16.0	14.0
Chattanooga	15.0	2.0	17.0	14.5
Knoxville	16.5	2.0	18.5	16.0
Nashville	15.5	2.0	17.5	13.5
Bristol	17.0	2.0	19.0	13.5
Little Rock, Ark.	17.0	4.0	19.0	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
San Francisco	15.0	2.0	18.0	15.5
Los Angeles	13.5	2.0	16.5	15.5
Fresno	15.5	2.0	18.5	17.5
Reno, Nev.	18.5	2.0	21.5	19.0
Portland, Ore.	16.0	3.0	19.0	16.5
Seattle, Wash.	15.0	2.0	18.0	16.5
Tacoma	15.0	2.0	18.0	16.5
Spokane	19.0	2.0	22.0	20.5
Phoenix, Ariz.	21.0	3.0	24.0	21.5

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Basin, Wyo.	17.0	1.0	....	14.0
Casper	15.0	1.0	17.0	12.0
Cheyenne	16.5	1.0	18.5	13.5
Cody	18.0	1.0	....	15.0
Lander	17.0	1.0	....	14.0
Albuquerque, N. M.	19.0	1.0	21.0	15.0
Salt Lake, Utah	20.0	2.0	22.0	17.0
Ogden	20.0	2.5	22.0	17.0
Denver, Colo.	14.0	2.0	16.0	13.5
Glenwood Spgs.	20.0	2.0	....	17.5
Pueblo	16.0	2.0	18.0	13.5
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	16.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	16.5
Missoula	21.0	2.0	23.0	16.0
Boise, Idaho	21.5	2.0	23.5	19.0
Idaho Falls	21.0	2.0	23.0	18.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
*Pittsburgh, Pa.	14.0	...	19.0	14.0
*Philadelphia	14.0	...	19.0	14.0
*Scranton	14.0	...	19.0	14.0
*Allentown	14.0	...	19.0	14.0
*Altoona	14.0	...	19.0	14.0
Dover, Del.	16.0	2.0	19.0	14.0
Wilmington	16.0	2.0	19.0	14.0
Hartford, Conn.	15.0	1.0	18.0	13.0
New Haven, Conn.	15.0	1.0	18.0	13.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Albany, N. Y.	15.0	...	....	13.0
*New York	15.0	...	....	13.0
Buffalo	13.0	...	....	12.0
Rochester	15.0	...	....	13.0
Syracuse	15.0	...	....	12.0
Boston, Mass.	15.0	...	....	13.0
Providence, R. I.	15.0	...	....	13.0
Augusta, Me.	15.0	1.0	....	13.0
Manchester, N. H.	16.0	2.0	....	13.0
Burlington, Vt.	15.0	1.0	....	13.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station prices in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Omaha	11.0	...	13.0	11.5
Crawford	14.0	...	....	12 25
McCook	14.75	...	16.75	13.0
Norfolk	13.75	...	15.75	12.6
North Platte	14.75	...	16.75	12.75
Scotts Bluff	14.25	...	16.25	12.25

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Dallas, Tex.	10.0	1.0	13.0	10.0
Fort Worth	10.0	1.0	14.0	10.0
Houston	10.0	1.0	14.0	10.0
San Antonio	10.0	1.0	12.0	10.0
El Paso	10.0	1.0	14.0	11.0
Muskogee, Okla.	12.0	2.5	17.0	11.0
Oklahoma City	12.0	2.5	15.0	11.0
Tulsa	14.0	2.5	17.0	11.0
Ft. Smith, Ark.	15.0	4.0	18.0	12.0
Little Rock	17.0	4.0	19.0	11.0
*Texarkana	16.0	4.0	19.0	10.0

*Does not include 1c additional tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
All Ohio points	15.0	...	17.0	14.0

TANK WAGON CHANGES

November 22.—Standard Oil Co. (New York) advanced gasoline tank wagon and service station prices 1 cent throughout New England. Magnolia Petroleum Co. advanced gasoline tank wagon and service station prices 2 cents in Tulsa.

CALIFORNIA MARKET IN SEASONAL SLUMP

LOS ANGELES, Cal., Nov. 24.—The California market is quite dull. Gasoline consumption is slumping, natural at this season. No price changes are noted except in the spot absorption gasoline which can now be readily obtained at from 10 cents to 10½ cents per gallon, compared with a price range of 10½ cents to 11 cents a week ago.

Crude production is declining from week to week on the Pacific Coast. It was confidently expected that the American Petroleum Institute report covering the month of October would show a draft on stocks. This does not prove the case and an increase in stocks is again reported in the Pacific Coast market. It is, however, expected that November will show a decrease in stocks. Obviously there is some uncertainty as to just when the corner will be turned but there is no uncertainty in regard to the fact that it either is being turned now or will be turned within a month or two. As soon as stocks of oil in the Pacific Coast marketing territory begin to decline we can look for a gradual stiffening of prices. It must be borne in mind, however, that this stiffening will be effected by the usual seasonal variations in demand and other trade factors and it in no event can be expected to be rapid as it will take a long time to decrease the present stocks by approximately 20,000,000 bbls. to 50,000,000 or 60 000.000 bbls. which would be required as a surplus if the Pacific Coast market were well balanced.

Purchases and sales of oil in the California territory seem to reflect the same dullness which is apparent from the lack of price changes.

COASTAL MARKETERS SOLD UP TO NEW YEAR

HOUSTON, Tex., Nov. 22. — Quotations on pale, red and filtered lubricating stocks are unchanged from last week, with demand strong and marketers sold up to January 1 and some beyond that date. Fuel oil is especially strong, quoted at $1.70 f.o.b. Houston refineries. Gas oil and zero black are quoted at 4½ to 5 cents and 6½ to 7 cents respectively.

The Gulf Refining Co. has resumed the sale of ethylized gasoline at its filling stations in Texas. Sales were suspended a few weeks ago following an explosion at an experimental plant in New Jersey. A gasoline "war" at Beaumont resulted in the price dropping to 8 cents at filling stations there. It is a local fight and is not expected to spread. The large marketers claim "bootleggers" have been jobbing prices and met the situation at once.

R. J. Barry, formerly with the National Oil Co. (Penrose interests) has a patented reclamation process in operation in the old Spindletop district, where millions of barrels of crude have been stored in earthen reservoirs during the past 20 years. Mr. Barry is reclaiming the sediment in these old abandoned reservoirs and converting it into fuel oil. He has reclaimed approximately 750,000 barrels of the sediment, selling the fuel oil to the Southern Pacific railroad. Seven men are employed at the plant.

The Sinclair Refining Co. is now receiving crude at its Sinco plant on the Houston ship channel, running it through its new cracking unit. The crude comes through the new line from Wyoming to eastern Nebraska thence south through the Mid-Continent fields and North Central Texas to Mexia and then through the Sinclair 8-inch line from Mexia to Sinco. Only small consignments have been received thus far.

CONTINUED BUYING IN OKLAHOMA MARKET

(Continued from Page 22)

nearby or in some other State, where the major portion of their products is utilized. The demand for high gravity blends for use in Canada and northern States continued with little difference in prices. The lower gravity blends were slightly softer, however.

Natural Gasolines

The rapidity which refiners in all parts of the country have absorbed natural gasolines was one of the outstanding features of the past week. As a result of the demand and the scarcity of Grade A material, price for this product advanced to a high point of 9 cents during the week, with a number of sales being made at 8¾ cents, also. Grade B advanced in line with the more stable product bringing 8½ to 8¾ cents, and Grade C, commanded 8¼ to 8½ cents.

The sale of 1,000,000 gallons of kerosene, previously mentioned, did much to bolster a sagging market for this product, with the result that prices remained stationary during the week. Colder weather was counted upon to bring out a new demand for kerosene and create a condition leading to a renewed demand and firmer prices. Better prices in Arkansas and North Louisiana are expected to aid in the stimulation of value for this product in North Texas and Oklahoma.

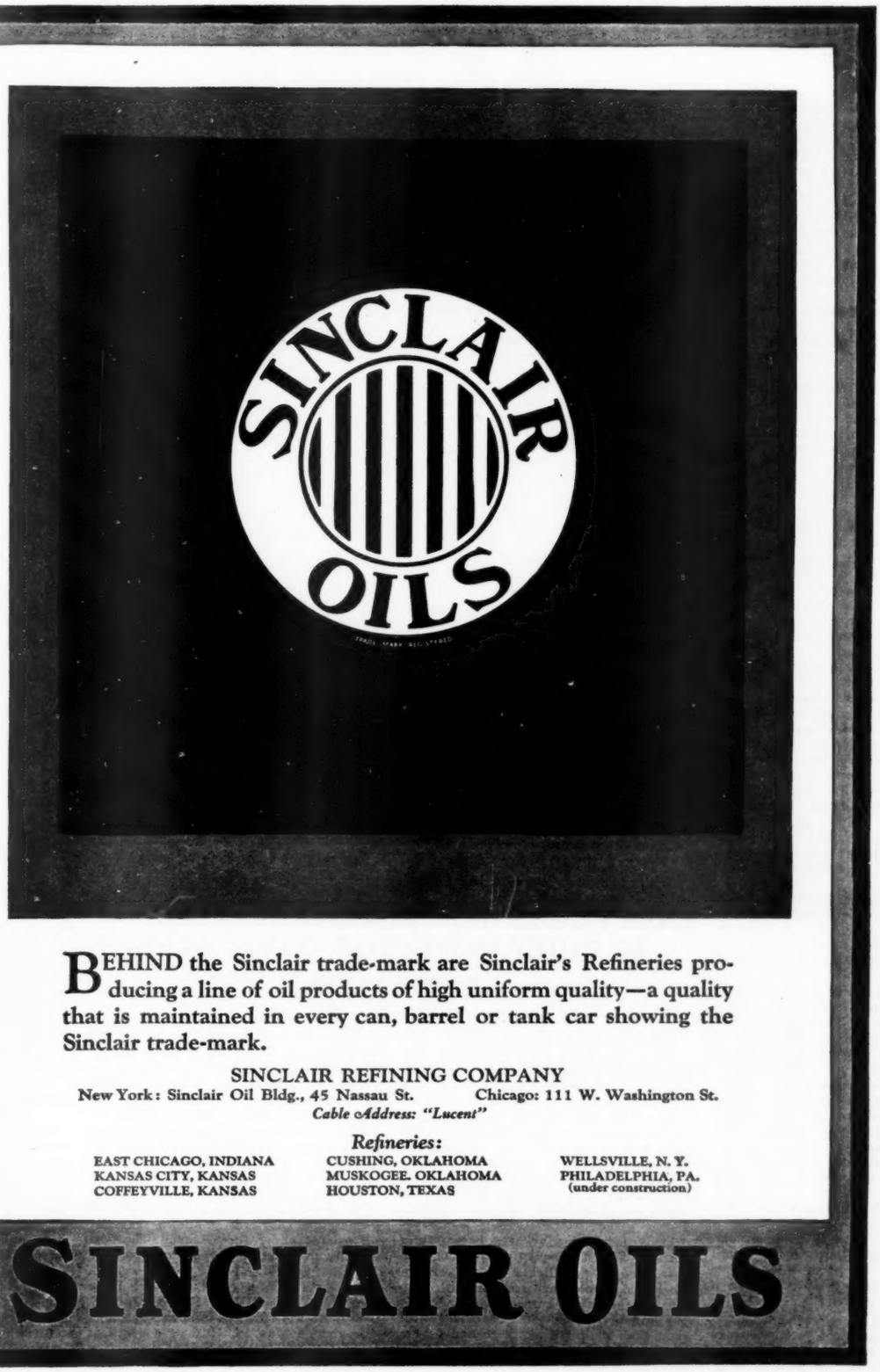
Fuel Oil Firm

For the average 24-26 gravity Oklahoma fuel oil, buyers found it almost impossible to get any appreciable amounts at a price lower than $1.05. Some of the low grade fuel oil was selling at $1.02½ in small, scattered amounts. The 28-30 gravity fuel oil was bringing as high as $1.15 $1.20 in most cases. The cold weather in the distillate consuming States of the Mississippi Valley was the cause of a slightly firmer tendency on the part of the 38-40 straw colored distillate. The price, however, was unchanged. Gas oil also showed no change in price.

Most of the lubricating oils made in Group 3 were selling on the same basis as the week previous. Neutrals were weak as a result of the sale of the Gulf Coast zeros for winter consumption in northern areas. It was the statement of several refiners that little relief could be expected in the sale of neutrals until the buying for spring and summer consumption started. Steam refined cylinder stocks were firm, however, with no changes of any consequence in prices quoted by the various refiners. Bright stocks were the strongest of the lubricants, bringing firm prices as a result of a continued good demand. The situation regarding wax has been explained in previous issues of The Oil and Gas Journal. The price continued to advance in Oklahoma as it became more apparent that the shortage was acute.

3,000-bbl. REAGAN COUNTY WELL

The Big Lake Oil Co. has another big well on its block of acreage in Reagan County, Texas. Its No. 13 University lands, located in Section 12, Block 2, got sand at 2,931 feet and was drilled to 2,950 feet. It flowed 117 bbls. the first hour, 130 bbls. the second and 140 bbls. the fourth hour and made over 3,000 bbls. the first 24 hours. The Marland Refining Co. recently made a contract with the Big Lake Oil Co. to buy its production in the Big Lake Field and is erecting storage to take care of the oil preliminary to carrying out its pipe line program.



BEHIND the Sinclair trade-mark are Sinclair's Refineries producing a line of oil products of high uniform quality—a quality that is maintained in every can, barrel or tank car showing the Sinclair trade-mark.

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New York: Sinclair Oil Bldg., 45 Nassau St. Chicago: 111 W. Washington St.

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MUSKOGEE, OKLAHOMA
HOUSTON, TEXAS
WELLSVILLE, N. Y.
PHILADELPHIA, PA. (under construction)

SINCLAIR OILS

Fundamental Conceptions Explained

Third Article of Series Pertaining to Fluid Delivery From Reservoirs Considers Additional Features

By Stanley C. Herold
Petroleum Geologist, Stanford University, California

In Article 12 of the installment published November 13, the subject "Phase" was introduced and the statement was subsequently made that delivery of fluid from reservoirs takes place according to the "Potential Phase." The installment closed with a discussion of Potential Pressure and Potential Volume. We now proceed with the consideration of the same phase of velocity, acceleration, energy, power, and time. These subjects are followed by other conceptions of fundamental importance.

Potential Velocity

24. Velocity is rate of displacement. Such a definition is general: it must, therefore, be made more specific for particular cases.

In mathematics one may speak of the velocity of a point, referring to its rate of motion, as compared with some other point which may be regarded as fixed. The motion causes displacement with reference to the same fixed point. The distance between the two points may be said to increase or decrease at a certain velocity at some given instant. A series of points constituting a line may also be in motion so that its displacement defines an area which is increasing or decreasing at a certain rate at some given instant. A series of lines constituting an area may likewise be moving so that its displacement defines a solid which may be increasing or decreasing at a certain rate at some given instant.

25. In mechanics or physics the problems in velocity concern particles or objects, also length or distance, area, and volume (the space occupied by a solid). Velocity is the rate of change in these things, either in position or in quantity.

26. In fluid delivery from reservoirs, the term velocity refers to the rate of displacement in volume. The reservoir contains a volume of liquid, gas, or both; its quantity is either infinite or finite, depending upon the "control," and such volume is being transferred from one place to another through the orifice at a "rate," or "velocity."

Velocity, in dealing with well reservoirs, is usually expressed in barrels per day, cubic feet per day, etc., etc. It must be expressed in volume per unit of time. Circumstances will determine the convenient units.

27. Potential velocity is the rate of displacement in potential volume. It is therefore the rate of flow through the orifice when the pressure against which production takes place has its normal value. It is not the rate of flow realized when opposing pressure has been temporarily altered. The "Open Flow" rate of a gas well is a good example of a velocity which is not a potential velocity. The well normally produces against a line pressure which has been temporarily removed for the purpose of measuring "open flow."

The so-called "Production Curve" is a velocity curve. In order that it be a potential velocity curve it must be compiled from the data representing actual production. The record of sales in the product from a well is sure to give a potential velocity curve.

Potential Acceleration

28. Acceleration is the rate of change of velocity. The same units employed in expressing the one may be used in designating the other. Our most common experience with the acceleration is with that due to the gravitational pull of the earth upon objects we are familiar with at the earth's surface. The value of the earth's acceleration is approximately 32.2 feet per second per second, or 981 centimeters per second per second. These values are determined by experiments performed in the physics laboratory.

29. The term acceleration may also be applied to the rate of change in velocity experienced with well reservoirs. In this case it is expressed in units of volume per unit of time per unit of time; for example, cubic feet per day per day, barrels per day per day, etc. etc.

Where there is no change in velocity, the value of the acceleration is zero. When velocity declines, acceleration has a value which is finite and negative. In the latter, it corresponds to the tossing of an object vertically into the air—the velocity declines until it comes to rest for an instant. From here on the comparison does not hold, for the object begins to fall, whereas the well remains at rest. Other than the fact that acceleration is finite and negative, there are no restrictions on its value. As examples, it may have a value less than one barrel per day per day, or more than 500 barrels per day per day. In fact, every position of a valve on a given well will produce an acceleration of different value. Furthermore, each well may have its own range of values for acceleration.

30. Potential acceleration is the rate of change of potential velocity.

Potential Energy

31. Fluids in reservoirs possess energy or capacity to perform work against forces which may be applied at the orifice; such forces tending to oppose production. The fluid may have energy by virtue of gravity through the agency of hydraulic pressure or by virtue of gas pressure alone.

Where the source of energy is due to gas pressure alone, and where the reservoir is located below the elevation of the orifice, and liquid present in the reservoir does not intrinsically possess energy which can be utilized in expelling the fluids obtained, since the flow must take place in an upward direction and not downward. Any productive energy which it may appear to have is due solely to its association with a compressed gas.

Energy may exist in several forms—mechanical, heat, chemical and electrical energy. Fluid delivery from reservoirs predominantly involves mechanical energy; heat energy is of next importance. The total energy possessed by the absolute volume of fluid in a reservoir is the absolute energy of the reservoir.

32. The energy possessed by the potential volume in a reservoir is the potential energy. No restriction is made as to the form of this energy. Nor is there any restriction upon the form it must possess after the fluid leaves the orifice. (Potential energy, as defined in physics, is that energy which a body possesses by virtue of its position. Thus it differs from kinetic energy which a body possesses by virtue of its motion. The present conception is purely general as to position or form of energy. The reservoir may be below or above the elevation of the orifice and any energy with which the potential volume can perform work is to be considered as potential energy.)

Potential Power

33. Power is the rate of performance of work. Energy is transferred from one body to another by such performance. The bodies may be either solids or fluids.

Obviously then, power is the rate of displacement of energy. It is a velocity of a special nature; it deals directly with the energy of a mass, whereas ordinary velocities concern the space or position occupied by the mass. Several important mathematical properties are common to the two but in other ways they are very distinct.

In fluid delivery one part of a fluid mass transfers energy to another part of the same fluid mass. The rate of transference may be uniform or it may decrease according to mathematical laws; i.e., it may be negatively accelerated.

The mass of fluid receiving energy may manifest the acquisition in several ways, to-wit:

(a) Mechanically. By taking on a position at a higher elevation or by taking on a greater velocity of motion.

(b) Thermodynamically. By displaying a higher temperature on account of the acquired heat.

(c) Chemically (?) and electrically (?).

34. Potential power is the rate of displacement of potential energy. No restrictions are made as to the form of energy before or after transference.

Potential Life

35. The reservoir's task of establishing or attempting to establish equilibrium requires time. Time, as a function of delivery, is of the same mathematical importance as all other functions of delivery. Were it no so, the results would be quite disastrous because the potential volume would be delivered without the elapse of time; the fluid would be produced from the reservoir at the instant of furnishing the orifice.

So far as we know, time is infinite,—it had no beginning and will have no ending. But, as a function of delivery, time has a beginning; it dates from the opening of the orifice or at any subsequent instant which we may choose as a zero point of reckoning. Whether it has an ending depends upon the "control" of the reservoir.

36. Time may be expressed in any of the customary units although the purposes of the mathematical analysis are best served by treating it in terms of the "life" of the reservoir. This method will permit a conversion into the ordinary units of time whenever desired in the case of any particular reservoir with its orifice. Life is infinite or finite according to whether the reservoir is of infinite or finite magnitude in a mathematical sense.

There are several phases of "life" to a reservoir. We shall consider only the potential phase at present and leave the others until such a time as they may be needed.

37. The time required by the reservoir to deliver its potential volume constitutes its potential life. This may be infinite or finite. When finite, it may have any value; in extreme cases potential life may be less than one minute or more than 100 years. As long as life is finite, it makes no mathematical difference what the duration of life happens to be, although the economic differences may be exceedingly great.

The potential life of a reservoir is divided into two parts: potential life elapsed and potential life remaining.

The Potential Reservoir

38. In the ordinary conception, a reservoir is a physical unit; we see it or we visualize its appearance by inference. Another important conception is the one which shall be held throughout the present analysis. Here is a mathematical entity. It is true that this conception would not hold without acknowledgement of the existence of the other; so we shall so acknowledge the fact and proceed.

A mathematical reservoir contains fluid under pressure. Without pressure and volume there is no reservoir. A space with volume and no pressure above the external pressure is not a reservoir; likewise, a space without volume of a particular fluid and therefore without pressure above the external pressure, is not a reservoir in the mathematical sense.

A mathematical reservoir possesses an orifice. When there is no orifice there is no reservoir. An orifice itself is therefore a mathematical entity and every

(Continued on Page 126)

EARLY DAYS IN BURBANK RECALLED BY CHIEF INSPECTOR, OSAGE AGENCY

By William Ash Waid
Chief Inspector, Osage Agency
Before Bartlesville Engineers Club

It has been suggested that I give some data on the Burbank Oil Field of the Osage Reservation. As a Government inspector at the Osage Agency this field will always hold to me many recollections. I am also mindful of the fact that many members of this Engineers' Club have been instrumental in its progress. The development has been of such recent origin that the mantle of time has cast no shadows over its memories nor has there been any detraction from its glimmer or glow. All of the field is not yet drilled, the productive area is not fully outlined and for some time to come the twinkling derrick lights of the crown-block and ginpole will continue to represent the oil man's star of hope.

For me, there is not a more beautiful sight than the night lights gleaming from the derricks of a modern drilling oil field, perhaps because I have spent many weary hours winding wicking from pin to pin of the bullwheels to use in lighting up the "yellow dogs" or in climbing the snow covered unlighted derricks along the Allegheny River hills to stow a piece of bacon skin under the squeaking axle of a crown pulley.

The first prospective oil leases, of the area now referred to as the Burbank Pool, were offered by the Department of the Interior acting for the Osage Tribe, at a public sale held at Pawhuska, November 9, 1918, at which time there were disposed of to the highest bidder, 21 quarter sections for a total bonus sum of $62,500 or an average of $2,976 for each quarter section of lease. This, it might be said, was the opening wedge.

It was not known at that time at what depth an oil formation might be encountered, nor was it known that any oil existed under these lands. The first drilling prospect to develop oil was the Marland Oil Co.'s No. 1 which was located on a high piece of prairie land in the SE of the NE of Section 26-27-5. The well was drilled into the Burbank oil sand on May 14, 1920 at a depth of 2,965 feet and with an initial production of 450 bbls. daily. Its location was in a great pasture possibly 6 miles north of the little town of Burbank, from which place the field received its name, and some 24 miles west of Pawhuska. There were no roads and there was no timber, except in the creek bottoms. You could see as far as the eye could carry, but the

(Continued on Page 72)

IDEAL SWIVELS

TYPE "GS"

UNEQUALLED SERVICE AT MINIMUM COST

THE NATIONAL SUPPLY COMPANIES

Cowley & Sumner Counties

Kansas Counties Due to Get Good Play

Cowley and Eastern Sumner Attracting More Attention With Numerous Wildcat Operations Giving Promise of Success

By C. D. Lockwood

With four separate oil producing areas of importance and two or three of minor significance in the making, and with 20 wildcat operations in various stages from rigs to drilling depths below 3,000 feet, Cowley County, Kansas, and the eastern tier of townships in Sumner County have recently drawn renewed attention from the Mid-Continent operators. While this area is not considered by most students of the situation to be one that is likely to seriously disturb the market, it is possible that the district around Winfield may repay the industry for the enormous sums spent in drilling dry holes in the county.

The two pools now thought to be the most promising in this district are the celebrated Rainbow Bend and the new one just recently opened up by T. B. Slick in Section 19-32-3e, with the deep sand in the old Winfield Pool just east of Winfield, a close third. What the Graham area amounts to is problematical following the duster drilled by the Waite Phillips Co. in the SE cor. of Section 4-33-3, offsetting the Alcorn Oil Co.'s discovery and the Gypsy Oil Co.'s No. 1 Poor. Both of the latter wells are averaging about 300 bbls. daily, the Gypsy producer being swabbed part of the time to maintain that production. The Rainbow Bend Field was making 7,350 bbls. daily the latter part of last week from 17 wells, and T. B. Slick's discovery in the next township was holding up to an output of 700 bbls. daily. It was still troubled with about a half of 1 per cent of water, but the belief was general that this is not coming from the sand. However, no test has been made to definitely establish that fact and unless the water increases, it will probably not be attempted.

The Winfield Pool

The Winfield Pool's big well was holding up to an output of 750 bbls. It is the J. A. Hull Co.'s No. 7 Kukuk (formerly owned by the Buffalo Trust Co., receivers for the Emerald Oil Co.). The same company's No. 7 Wallace, the discovery well of the 3,000-foot sand, was still making 150 bbls. daily and No. 4 Ditmer and No. 6 Wallace, the other two wells which have been drilled into the deep sand, were averaging about 100 bbls. each.

That the latter two wells indicate the trend of the pool to the north is apparently shown by the Marland Oil Co.'s No. 1 Lierman, SE cor. SW, Section 13-32-4e, a half mile north of the Emerald gusher. As this is written, the Marland

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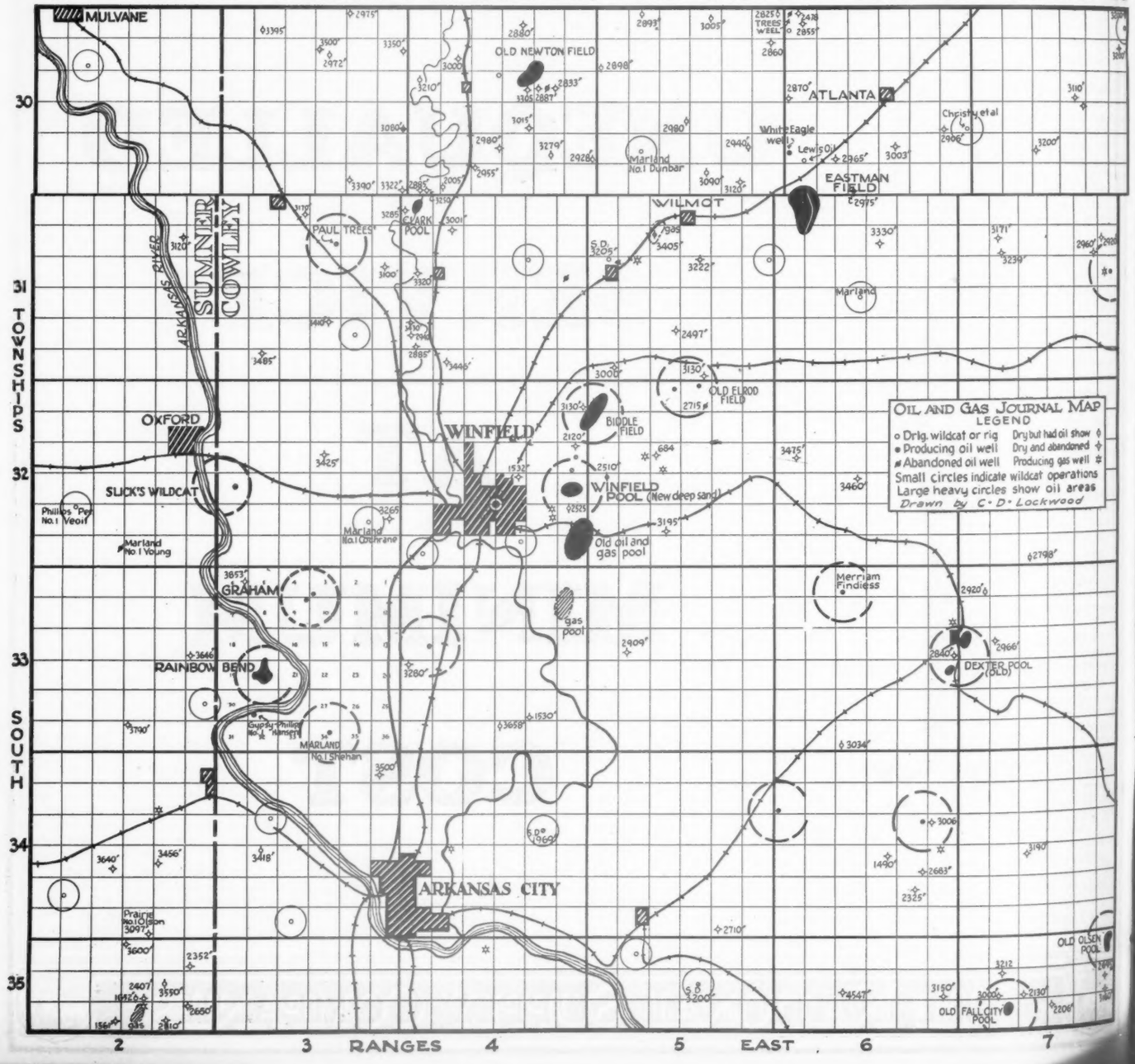
NEW POOLS AND WILDCATS IN COWLEY AND EASTERN SUMNER COUNTIES



For miles this stream was covered with B.S. and cut oil. This was a general condition of the streams passing through oil fields until the Tret-O-Lite process was introduced.

If You Discard "B. S."

—*you are throwing away dollars*

The tremendous waste of "cut oil" of the early days was first halted by the introduction of Tret-O-Lite.

Vast quantities of "cut oil" no longer flow down the streams; but a great waste continues, nevertheless, through the discarding of "B. S." containing petroleum. Some producers will not trouble to treat 1 to 5% of B. S., but simply discard it. Others, in treating "cut oil," use unscientific methods which leave a "B. S." residue that is then discarded.

Such "B. S." can be economically collected and treated with Tret-O-Lite and its petroleum completely recovered. Ask us for particulars.

YOU CAN PREVENT "B. S."

TRET-O-LITE has long been used to cure "B. S.". It is now also being used to prevent its accumulation. When mixed with the oil as it flows from the well, it brings about a clean break in the storage tank, where formerly a "B. S." residue was formed. Above is shown a "Tret-O-Lizer" for insertion on flow lines.

WM. S. BARNICKEL & COMPANY
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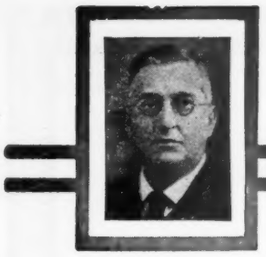


North-Central Texas Field

By Dan F. Dugan

Gain of 2,104 bbls. during week, mostly in Archer County and South Vernon Field, where many purchases are reported. Olney Pool one of the most active spots, development extending over to Young County. Carey and others' No. 2 Pollei, near completion, flowing 600 bbls.; Maer and others' No. 2 Pollei, 500.

FORT WORTH, Tex., Nov. 24.—For the first time in more than a month the North Central Texas oil fields during this week show a substantial gain in daily production. The gain showed up principally in Archer County and Wilbarger County, the older fields recording their customary losses.

Total production this week is 127,364 bbls. compared with a total last week of 125,260 bbls., a gain for the week of 2,104 bbls. The Iowa Park district, which includes the production from the flush pools of Archer County showed a gain over the previous week of 1,524 bbls., while the wildcat fields registered a gain over the previous week of 2,865 bbls. The gain in the wildcat territory was very largely from the South Vernon Field in Wilbarger County where there is a gain of 2,500 bbls. over the runs of the previous week.

All the older producing districts registered losses. Burkburnett lost 820 bbls., Electra lost 1,050 bbls., Stephens County recorded a loss of 395 bbls. and Eastland County lost 20 bbls.

Completions during the week totaled 60 compared with 57 for the previous week. Of the completions 38 were oil producers and 22 were dry holes. There were no gas wells completed. The 38 oil producers for the week compare with 41 for the previous week and the 22 dry holes compare with 14 for the previous week. The 38 oil producers had a total new daily flush production of 13,060 bbls.

Archer County Led

As usual, Archer County led in completions with a total of 31 of which 24 were oil producers and 7 were dry holes. The 24 oil producers in this county had a new production of 7,710 bbls. or an average per well of more than 320 bbls.

The wildcat districts recorded 15 completions, only 4 of which were oil producers, 11 being dry holes or abandoned wells. Three of the wildcat producers were in the South Vernon Field of Wilbarger County and 1 was in Callahan County. The 3 new oil producers in Wilbarger County had a total new production of 4,560 bbls.

Wichita County reported 6 completions, 5 of which were oil producers with a new daily production of 365 bbls. The county had 1 dry hole during the week. Young County reported 5 completions, 3 of which were oil producers and 2 dry holes. The 3 producers in the county had flush production, totaling 200 bbls. There were 3 completions in Stephens County, 2 producers with a total new production of 210 bbls.

There were no completions in Eastland County.

Carey and others' No. 2 Bridwell is another Archer County completion reported making 500 bbls. at 1,135 feet, while Maer and others' No. 2 Bridwell in the same area is making 460 bbls. at 1,134 feet.

Olney Pool Activity

One of the most active spots in the whole of the North Central Texas territory is the Olney Pool, in South Archer and northern Young County. Development has pushed far over the line now into Young County where at least a dozen new locations were made during the past week.

A near completion in this district which is reported showing for a good producer is Carey and others' No. 2 Pollei. This well is reported late in the week to be flowing around 600 bbls. daily from a sand at 1,120 to 1,135 feet. Maer and others' No. 2 Pollei is another near completion in this same area. Late reports are to the effect that this well is flowing around 500 bbls. daily from the regulation depth of 1,120 to 1,140 feet.

While the southern part of Archer County is holding the center of the stage in oil field development some good average wells seem to be showing up in other parts of the county. Muse and others in the north half of the county have two wells on the J. H. White land nearing completion according to late field reports. Their No. 7 and No. 8 White were reported late in the week to be flowing around 200 bbls. each from the sand at 1,600 feet.

South Vernon Purchases

The South Vernon Field in Wilbarger County is rapidly approaching something of the boom stage. Three good completions the past week adding a total of approximately 4,550 bbls. daily and other wells which are nearing the completion depth caused considerable flurry for acreage in that territory and some buying is reported.

Among the purchases reported is one by Ray and others of a 20-acre tract out of the Williams-Bond-Hawkins land for a consideration of $2,000 per acre. It is reported also that the lease carries an extra one-eighth overriding royalty to the former owners. The same operators have recently contracted for the construction of additional field storage on their South Vernon property amounting to 15,000 bbls.

The Winnipeg Oil Co. purchased from the W. T. Waggoner estate a tract of land consisting of 40 acres in the South Vernon Pool of Wilbarger County, for a consideration of $80,000; $20,000 cash and the balance in oil. The property is to the south and west of the big production group.

Another reported purchase in this field is by Muse and others. They bought 20 acres out of the Richardson tract in South Vernon for $600 an acre cash and $600 in oil. The Gulf Production Co. is reported to have purchased a producing property in the South Archer County Field last week from Maer-Staniforth and others and consists of 96 acres out of the Griffin and Rogers lands together with five producing wells with production aggregating about 1,200 bbls. The price paid was said to have been $400,000.

The Sinclair Pipe Line Co. has completed the laying of its 4-inch pipe line from the Electra district to the new South Vernon Field and made the first run of oil during the past week. The line has already been connected with the leases of the Winnipeg Oil Co. and the South Vernon Oil Co. and is now running 2,000 bbls. daily from each of the leases. Considerable production in the field has already been contracted for by this line.

Panhandle District

In the Panhandle district The Texas Co.'s No. 1 M. C. Burnett, which was reported last week as a new completion making 55,000,000 feet of gas daily is now reported to have increased the flow to 100,000,000 feet of gas daily without having been drilled any deeper.

In Gray County, also in the Panhandle Field the H. F. Wilcox Oil & Gas Co.'s No. 1 Worley and Reynolds has been cleaned out and drilled 5 feet deeper without any appreciable increase in production from the well. This well has been on the semi-completion list for several months.

The Western Enterprise Oil & Gas Co.'s No. 1 Smith in Hutchinson County, Texas Panhandle, is reported drilling in granite wash at around 2,925 feet. The granite wash is the customary producing formation in the Panhandle district.

Wichita County Completions

Donovan and others' No. 1 Borgfeldt, dry at 1,605 feet; Magnolia Petroleum Co.'s No. 39 Rio Bravo, 60 bbls. at 1,675 feet; O'Donohoe and others' No. 3 Allen & Kemp, 60 bbls. at 1,185 feet; Texhoma Oil & Refining Co. and others' No. 1-B Burnett, 80 bbls. at 1,590 feet; Texhoma Oil & Refining Co.'s No. 11-B Burnett, 110 bbls. at 1,590 feet; Underwood Drilling Co.'s No. 1 Watkins, 55 bbls. at 1,770 feet.

Archer County Completions

Atlantic Oil Co.'s No. 5 Parrish, 225 bbls. at 1,560 feet; Humble Oil & Refining Co.'s No. 2 Pease, dry at 1,465 feet; McCarty Oil Co.'s No. 4-B Wilson, 80 bbls. at 1,593 feet; Riner and others' No. 13-B Wilson, 70 bbls. at 1,623 feet; Robertson and others' No. 11 White, 145 bbls. at 1,610 feet; Texhoma Oil & Refining Co.'s No. 3-C Wilson, 75 bbls. at 1,415 feet; Woodburn Oil Corp.'s No. 12-A Wilson, 70 bbls. at 1,620 feet; Carey Drilling Co.'s No. 2 Bridwell, 500 bbls. at 1,135 feet; Consolidated Oil Co.'s No. 4 Bearden, 25 bbls. at 1,082 feet; same company's No. 4-A Davis, 300 bbls. at 1,085 feet; Gwynn and others' No. 1 Farmer, dry at 1,560 feet; Humble Oil & Refining Co.'s No. 1 Ragle, 25 bbls. at 1,094 feet; Maer and others' No. 2 Bridwell, 460 bbls. at 1,134 feet; same company's No. 1 Neal, dry at 1,410 feet; Melat and others' No. 4 Goldsmith, (estimated) 125 bbls. at 1,359 feet; same company's No. 5 Goldsmith, 75 bbls. at 1,360 feet; Murchison and others' No. 3 Harmell 1,300 bbls. at 1,285 feet; same company's No. 1-C Harmel, 320 bbls. at 1,280 feet; same company's No. 1 Wood, dry at 1,322 feet; Muse and others' No. 1 Kunkel, dry at 1,506 feet; Petroleum Producers Co.'s No. 2 Rogers 230 bbls. at 1,275 feet; Ray and others' No. 1 Hausler, 1,395 bbls. at 1.130 feet; same company's No. 2 Hausler, 1,200 bbls. at 1,149 feet; Shamrock Oil Co.'s No. 7 Campbell, 100 bbls. at 1,340 feet; same company's No. 13-B Richardson, 65 bbls. at 1,290 feet; same company's No. 18 Goldsmith, 125 bbls. at 1,325 feet; Texhoma Oil & Refining Co.'s No. 3 Hausler, 400 bbls. at 1,135 feet; same company's No. 4 Hausler, 1,200 bbls. at 1,125 feet; Lee Wilson and others' No. 4 Bearden, 200 bbls. at 1,075 feet.

Young County Completions

Burton and others' No. 1 Miller, dry at 1,314 feet; Litchfield and others' No. 1 Campbell, estimated 75 bbls. at 1,047 feet; Nash and others' No. 1-B Williams, dry at 3,100 feet; Simms Oil Co.'s No. 1 Willis, estimated at 75 bbls. at 3,955 feet; Stoval and others' No. 2 Stoval, 50 bbls. at 3,140 feet.

Stephens County Completions

Texas Pacific Coal & Oil Co.'s No. 5 Rogers, dry at 4,533 feet; Walker and others' No. 5 First National Bank, 200 bbls. at 3,172 feet; Texas Fidelity Oil Co.'s No. 1 McClure, 10 bbls. at 3,470 feet.

Wildcat Completions

Wilbarger County: Ray and others' No. 1 Bond, 1,895 bbls. at 2,050 feet; same company's No. 1 Dill, dry at 2,059 feet; Winnipeg Oil Co.'s No. 1 Bond, 1,165 bbls. at 2,049 feet; same company's No. 2 Bond, 1,600 bbls. at 2,056 feet.

Baylor County: Mundt and others' No. 1 Haggard, location abandoned.

Throckmorton County: Adams and others' No. 1 Polk County school land, dry at 1,430 feet.

Shackelford County: McMahon and others' No. 2 Lynch, dry at 3,900 feet.

Callahan County: Dudley Oil & Gas Co.'s No. 1 Moore, 15 bbls. at 1,853 feet; Prewitt and others' No. 1 Bailey, dry at 1,940 feet; same company's No. 1 Betcher, dry at 2,635 feet.

Reeves County: Rodenbough and others' No. 1 Casey, dry at 820 feet; Pico Petroleum Co.'s No. 1 Johnson, dry at 1,928 feet; Texas Drilling & Development Co.'s No. 1 Pecos Valley Syndicate, dry at 1,100 feet; Troy and others' No. 1 Horshenson, dry at 415 feet; Willoughby Petroleum Co.'s No. 1 Cowan, dry at 698 feet.

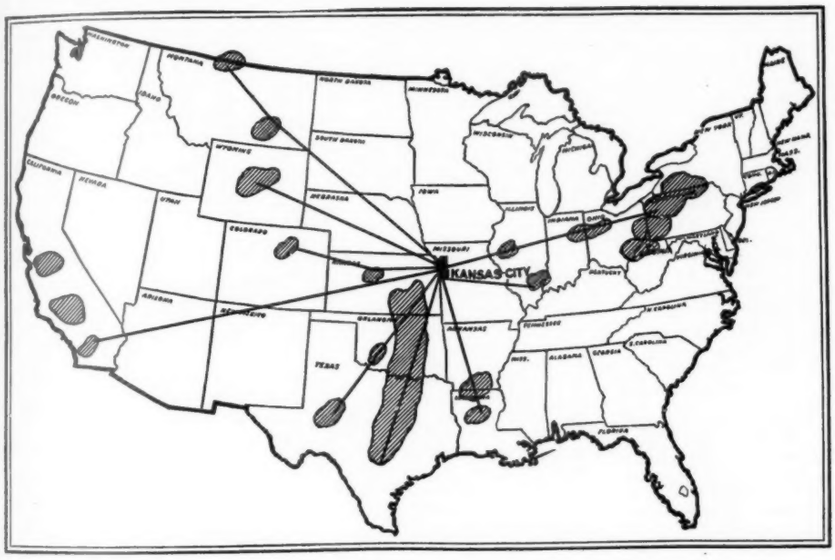
Wichita County Drilling

Clopton and others' No. 1 Rathgaber, coring sand at 1,700 feet; Hunter and others' No. 4 Bailey, testing at 400 feet; Magnolia Petroleum Co.'s No. 108 Reilly, cleaning out at 1,265 feet; same company's No. 109 Reilly, spudding. Same company's No. 41 Staley Beach, drilling at 860 feet; O'Neil and others' No. 1 Doneghy drilling at 100 feet; Pace and others' No. 1 Roller, drilling in rock at 500 feet; Shappell Oil Co.'s No. 1 Sisk, drilling at 4,310 feet; Kentucky Oil Corp.'s No. 3 Kemp, drilling in rock at 640 feet; Barr and others' No. 1 Fisher, coring sand at 1,917 feet; Burnett Ranch Oil Co.'s No. 9 Burnett, drilling at 350 feet; Elliott and others' No. 2 Jennings, cleaning out at 1,850 feet; Granite Oil Co.'s No. 7 Fisher, drilling at 350 feet; Hammond and others' No. 1 Waggoner Brothers showing oil at 1,830 feet; Hampton and others' No. 1 Fisher, testing sand at 1,005 feet; Hawkins and others' No. 1 Watkins, spudding; Herbert Hughes and others' No. 1 Ferguson, drilling at 1,200 feet; Hill and others' No. 11 Overby, drilling in shale at 1,300 feet; Kruger and others' No. 8 Allen & Kemp, drilling in shale at 1,620 feet; Leath-McCoy Oil Co.'s No. 1 Kemp, drilling at 840 feet; Magnolia Petroleum Co.'s No. 11 Douglas, cleaning out at 600 feet; same company's No. 65 Honaker, cleaning out at 900 feet; same company's No. 8 McMahon-Waggoner, underreaming at 930 feet; same company's No. 40 Rio Bravo, drilling at 995 feet; same company's No. 4-F Pere Waggoner, drilling in rock at 530 feet; same company's No. 8-A Waggoner, drilling at 1,120 feet; same company's No. 4-B Waggoner, setting casing at 670 feet; Min-Tex Oil Co.'s No. 7 Roller, cementing casing at 1,240 feet; Moore and others' No. 2 Kemp & Allen, fishing for casing at 1,740 feet; Rubsom and others' No. 3 McClure, showing oil at 794 feet; The Texas Co.'s No. 1 Kemp & Kempner, drilling at 1,400 feet; same company's No. 296 Waggoner, drilling at 1,745 feet; Texhoma Oil & Refining Co. and others' No. 5-A Burnett, showing oil at 1,580 feet; Texhoma Oil & Refining Co.'s No. 12-B Burnett, drilling at 1,450 feet; same company's No. 3-C Burnett, drilling in shale at 1,650 feet.

Archer County Drilling

A. B. C. Oil Co.'s No. 3 Ferguson, showing oil at 1,750 feet; Long and others' No. 1 K. & K., drilling at 1,400 feet; Anderson and others' No. 2 Hughes, showing oil at 595 feet; Barkley and others' No. 5 Wilson, drilling at 300 feet; Carter and others' No. 3-C White, drilling in shale at 1,580 feet; same company's No. 11-E White, showing oil at 1,600 feet; same company's No. 12-E White, resetting casing at 1,590 feet; same company's No. 13-E White, drilling at 900 feet; same company's No. 14-E White, drilling at 400 feet; same company's No. 1-F White, drilling in rock

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



Oil fields and possible oil fields are shown roughly in map above with the central location of our plant in Kansas City.

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Work was begun on the 10-acre site several months ago and the contractors plan to have the new plant ready for occupancy the first of the year.

Needless to say it is modern in every detail. The final plans were not drawn until the best ideas in modern industrial plants had been carefully studied throughout the country.

Of course we'll be able to make more Perfection Vapor Pressure Tanks and make them faster!

We feel it's a tribute to ourselves and our product that it became necessary to build the new Kansas City plant. In return we pledge ourselves to render super-service to service already beyond reproach, which the Kansas City plant makes possible.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

at 450 feet; Fuller and others' No. 3 Miller, showing oil at 735 feet; Humble Oil & Refining Co.'s No. 1 Wilson, drilling at 1,410 feet; same company's No. 1-B Wilson, drilling at 1,300 feet; Humphreys and others' No. 10 White, showing oil at 1,610 feet; same company's No. 11 White, drilling at 200 feet; Jetter and others' No. 2 White, drilling in rock at 580 feet; Lane and others' No. 3 White, showing oil at 1,615 feet; Lincoln and others' No. 1 Oil Investment Co., putting on pump at 1,105 feet; Magnolia Petroleum Co.'s No. 6 Parrish, on sand at 1,585 feet; same company's No. 7 Parrish, drilling at 1,500 feet; Oil Investment Co.'s No. 1 Fee, feeling for sand at 1,100 feet; Riner and others' No. 3-A Wilson, running underreamer. Robertson and others' No. 3 White, drilling at 1,570 feet; same company's No. 10 White, drilling at 1,585 feet; same company's No. 12 White, drilling at 1,400 feet; same company's No. 13 White, drilling at 400 feet; Rayzor and others' No. 1 Edwards, running underreamer. Simms Oil Co.'s No. 3 Parrish, drilling at 1,470 feet; Woodburn Oil Corp.'s No. 11-A Wilson, fishing at 1,515 feet; same company's No. 14-A Wilson, drilling at 760 feet; Barbee and others' No. 1 Campbell bailing at 1,440 feet; Bridwell and others' No. 1 Norred, drilling at 1,280 feet; Carey and others' No. 3 Bridwell, drilling in rock at 375 feet; Clark and others' No. 5 Echols, drilling at 1,240 feet; Cline and others' No. 1 Cowan, drilling at 1,030 feet; Consolidated Oil Co.'s No. 5 Bearden, drilling in rock at 420 feet; same company's No. 5-A Davis, drilling at 700 feet; same company's No. 6-B Ragle, drilling at 1,070 feet; same company's No. 2-E Ragle, drilling at 700 feet; same company's No. 3-E Ragle, fishing at 715 feet; same company's No. 4-E Ragle, drilling at 920 feet; Green and others' No. 1 Rogers, bailing at 1,415 feet; Gwynn and others' No. 1 Rogers, drilling at 960 feet; same company's No. 2 Rogers, drilling at 875 feet; same company's No. 2 Wood, drilling at 350 feet; Grisham and others' No. 3 Davis on sand at 1,060 feet; Goldsmith and others' No. 1 Young, drilling at 980 feet; Hardesty and others' No. 1 Hausler, drilling at 745 feet; Harris and others' No. 1 Stamfli, drilling at 1,150 feet; Harris and others' No. 1 Martin, drilling in rock at 300 feet; Hobbs and others' No. 1 Russell, drilling in lime at 1,145 feet; Humble Oil & Refining Co.'s No. 1 Hausler, drilling in rock at 380 feet; same company's No. 2 Ragle, drilling at 360 feet; Maer and others' No. 3 Bridwell, drilling at 890 feet; Murchison and others' No. 2-A Harmel, drilling in rock at 500 feet; same company's No. 2-B Harmel, drilling at 350 feet; same company's No. 2 Griffin, drilling out plug at 1,275 feet; same company's No. 3 Griffin, fishing at 1,285 feet; same company's No. 4 Griffin, drilling in rock at 540 feet; same company's No. 2 Wood, drilling at 100 feet; Mutual Oil Co.'s No. 1 Harmel, setting casing at 1,265 feet; Nebraska Texas Oil Co.'s No. 1 Holosek will plug at 1,475 feet; Producers Petroleum Co.'s No. 1 Bridwell, setting casing at 1,120 feet; same company's No. 3 Rogers, setting casing at 1,265 feet; same company's No. 4 Rogers, drilling at 790 feet; Ramming and others' No. 1-B Andrews, drilling at 915 feet; Shamrock Oil Co.'s No. 8 Campbell, drilling at 1,000 feet; Southern Exploration Co.'s No. 1 Kinder, drilling at 890 feet; Sun Oil Co.'s No. 3 Green, drilling in rock at 475 feet; Stump and others' No. 1 Wood, drilling at 150 feet; The Texas Co.'s No. 2 Jeske, drilling at 990 feet; Texhoma Oil & Refining Co.'s No. 6 Hausler, drilling in rock at 470 feet; Underwood Drilling Co.'s No. 2 Rogers, drilling at 1,060 feet; Archer Oil Corp.'s No. 1 Farmer, plugging back at 1,425 feet; Green and others' No. 3 Ambercrombie and others, drilling at 300 feet; Magnolia Petroleum Co.'s No. 1 Roberson, drilling at 1,785 feet; McJunkin and others' No. 1 Falls County School Land, drilling at 300 feet; Mitchim and others' No. 1 Taber, drilling in shale at 1,530 feet; Saunders and others' No. 3 Logan, drilling at 500 feet; Simms Oil Co.'s No. 1 Farmer, drilling at 1,280 feet; Sun Oil Co.'s No. 6 Farmer, running underreamer; Tucker and others' No. 1 Farmer, cleaning out after a shot 1,290 feet.

Young County Drilling

Applegate and others' No. 1 Zimmerman, drilling at 1,150 feet; Brian and others' No. 1 Vernon, drilling at 785 feet; Burns and others' No. 1-E Alexander, drilling at 1,330 feet; Cheney and others' No. 1 Harrison, fishing at 2,130 feet; Christie Brothers' No. 3 McLaren, drilling at 350 feet; Dunn and others' No. 1 Johnson, drilling at 4,385 feet; Herbert Drilling Co.'s No. 1 Johnson, drilling at 2,690 feet; Hopper and others' No. 1 Graves, drilling at 200 feet; Keener Oil & Gas Co.'s No. 1 Marshall, drilling at 1,280 feet; McGarr and others' No. 1 Johnson, drilling in lime at 4,240 feet; Monroe Production Co.'s No. 1 Cheney, drilling at 2,565 feet; Miller and others' No. 1 Hume, showing oil at 3,260 feet; Reed and others' No. 1 Campbell, drilling at 400 feet; same company's No. 1 Foster, drilling at 380 feet; Texas Central Oil Co.'s No. 1 Taag, drilling at 1,530 feet; Union Oil Co.'s No. 1 Keathley, drilling at 3,320 feet; Vance and others' No. 1 Dawes, drilling at 1,450 feet.

Stephens County Drilling

A. B. Oil Association's No. 1 Bascom, is cleaning out at 2,800 feet; Hoffer Oil Corp.'s No. 1 Webb, mudding off casing at 2,855 feet; Ivan Petroleum Co.'s No. 2 Martin, plugging back to shoot at 3,290 feet; Mid-Kansas Oil Co.'s No. 3 Lee, drilling at 2,070 feet; same company's No. 2 Williams, drilling at 2,430 feet; Pender Production Co.'s No. 3 Keel, drilling at 1,400 feet; Pierce and others' No. 1 Crudington, drilling in lime at 3,475 feet; Prairie Oil & Gas Co.'s No. 15 Atkins, cementing 5-inch casing at 3,195 feet; same company's No. 2 Caldwell, fishing at 2,500 feet; Republic Production Co.'s No. 2 Knox, drilling at 3,335 feet; Snowden & McSweeney's No. 8 Ackers, cleaning out at 3,040 feet; same company's No. 5 Higginbotham, fishing at 3,175 feet; Swensondale Oil Co.'s No. 1 Echols, showing oil at 3,280 feet; Texas Consolidated Oil Co.'s No. 6 Martin, drilling at 1,800 feet; Stewart and others' No. 4 First National Bank, drilling by casing at 1,750 feet.

Buckeye Development Co.'s No. 8 Walker, drilling at 600 feet; Carter and others' No. 1 Jennings, drilling on top of black lime at 3,300 feet; same company's No. 1 T. & P., drilling in lime at 3,570 feet; Christie Brothers' No. 4 Humphreys, drilling at 1,350 feet; Clark and others' No. 4 Post, drilling at 1,050 feet; Cobb and others' No. 1 Simmons, drilling by underreamer at 1,005 feet; Fouts and others' No. 1 McClesskey, drilling at 3,005 feet; Humble Oil & Refining Co.'s No. 1 O'Laughlin, showing gas at 3,790 feet; Kleinfelder and others' No. 1 Grimes, drilling at 2,920 feet; Knox and others' No. 1 Flournoy, drilling in lime at 3,560 feet; Landreth Production Co.'s No. 1 Ward, skidding rig; Lewis Oil Corp.'s No. 1 Brown, drilling at 1,020 feet; Magnolia Petroleum Co.'s No. 9 C. B. Brown, fishing at 3,812 feet; same company's No. 7, J. W. Brown, drilling at 2,800 feet; same company's No. 8 J. W. Brown, drilling at 1,825 feet; same company's No. 5 McCauley, fishing at 3,185 feet; same company's No. 1 Taylor, drilling in lime at 3,810 feet; Mook Texas Oil Co.'s No. 2 Head, drilling at 1,600 feet; Pender Production Co.'s No. 1 Hart, drilling at 2,700 feet; Shimmell and others' No. 1 Watson, setting 12-inch casing at 1,140 feet; Scott and others' No. 1 Curry, drilling at 250 feet; Sindorf Brothers' No. 2 Sorges, cleaning out at 1,835 feet; States Oil Corp.'s No. 1 Boles, drilling in black lime at 3,250 feet; Sun Oil Co.'s No. 6 Stoker, cleaning out at 3,130 feet; The Texas Co.'s No. 10 Curry, drilling at 2,865 feet; Texas Pacific Coal & Oil Co.'s No. 1 Veale, reaming at 2,960 feet; same company's No. 2-D Watson, drilling at 2,160 feet; Triplehorn Petroleum Association's No. 1 Adams, drilling in black lime at 3,895 feet.

Eastland County Drilling

Adams and others' No. 2 Dawson, drilling at 1,020 feet; same company's No. 1 Pettit, drilling at 700 feet; Beard and others' No. 1 Armstrong, drilling at 1,400 feet; Dixie Oil Co.'s No. 1 Brashear, drilling in lime at 3,080 feet; King & Brewer's No. 5 Shugart, drilling at 2,250 feet; Lobough and others' No. 2 Holcomb, drilling at 1,200 feet; Magnolia Petroleum Co.'s No. 4 Rogers, spudding; Parsons and others' No. 1 Scott, drilling at 2,060 feet; Pittman and others' No. 1 McMinn, spudding; Reclamation Oil Co.'s No. 6 Bond, fishing at 2,195 feet; States Oil Corp.'s No. 8 Quiett, drilling in lime at 3,200 feet; Teatsworth and others' No. 1 Scott, drilling at 1,125 feet; Eastland Oil Co.'s No. 1 Jordan, drilling at 1,675 feet; Keough Brothers' No. 10 Gooch, drilling at 2,300 feet; Knox-Lewis Oil Co.'s No. 1 White, drilling at 465 feet; Ladd and others' No. 1 Owens, drilling at 930 feet; McMeans and others' No. 1 Storm, spudding; Riley and others' No. 1 McClelland, drilling at 1,080 feet; Rosenfield and others' No. 1 Brunett, reaming at 3,205 feet; Root and others' No. 1 Ammerman, drilling at 1,300 feet; same company's No. 1 Hart, drilling at 2,450 feet; Weaver Oil Corp.'s No. 1 Dulin, spudding.

Wildcats Drilling

Hutchinson County: Dixon Creek Oil Co.'s No. 1 Smith, drilling in red beds at 1,200 feet; Douglas Oil Co.'s No. 1 Whittenburg, underreaming at 1,920 feet; Amarillo Oil Co.'s No. 2-B Bivens, drilling in lime at 2,465 feet; Prairie Oil & Gas Co.'s No. 1 Shaw, drilling in red shale at 1,820 feet; Twin Six Oil Co.'s No. 1 Kingsland, drilling in lime at 2,090 feet; Tex-O-Oil Co.'s No. 1 Johnson, showing gas at 1,175 feet; Western Enterprise Oil & Gas Co.'s No. 1 Smith, drilling in granite wash at 2,925 feet; Wilson and others' No. 1 Whittenburg, caving at 2,925 feet.

Moore County: Amarillo Oil Co.'s No. 1-A Masterson, drilling at 460 feet.

Potter County: Amarillo Oil Co.'s No. 1 Warwick, setting casing at 2,025 feet; same company's No. 1 Bush, setting casing at 2,960 feet.

Carson County: American Refining Co.'s No. 3 Burnett, drilling at 1,835 feet; Crosby Oil Co.'s No. 1 Burnett, drilling in lime at 2,020 feet; Culberson Brothers' No. 1 Armstrong, drilling at 2,962 feet; Danciger Oil & Refining Co.'s No. 1 Burnett, drilling in lime at 2,920 feet; Marland Oil Co.'s No. 1 Burnett, drilling in lime at 2,180 feet; Olson Brothers' No. 1 Burnett, fishing at 2,500 feet; Silk and others' No. 3-A Burnett setting casing at 2,075 feet; Skelly Oil Co.'s No. 2 Burnett, drilling at 900 feet; The Texas Co.'s No. 2-A M. C. Burnett, drilling at 1,930 feet; same company's No. 4 Burnett, will shoot at 2,965 feet.

Gray County: Clark and others' No. 1 Combs & Worley, drilling at 1,400 feet; Dilliard and others' No. 1 Henry, drilling in lime and shale at 2,710 feet; Holmes and others' No. 2 Morse, drilling in lime at 2,128 feet; Wilcox Oil & Gas Co.'s No. 1 Wilson, drilling in red shale at 3,385 feet.

Wheeler County: Shedden and others' No. 1 Westmoreland, cleaning out at 479 feet; Whittington and others' No. 2 Williams & Laycock, underreaming at 1,480 feet.

Wilbarger County

Barkley and others' No. 1 Stephens, spudding; Bridwell and others' No. 3 Stephens, drilling at 1,150 feet; same company's No. 4 Stephens, drilling at 900 feet; same company's No. 5 Stephens, drilling at 675 feet; Dill Farm Oil Co.'s No. 1 Dill, underreaming at 2,190 feet; Hamilton and others' No. 1 Kester, drilling at 475 feet; Hart and others' No. 1 Smith, underreaming at 2,120 feet; Kolp and others' No. 1 Waggoner, drilling at 1,480 feet; McCamey and others' No. 1 Richardson, feeling for sand at 1,830 feet; Noble Oil Co.'s No. 1 Waggoner, underreaming at 2,125 feet; Oklahoma-Texas Refining Co.'s No. 1 Bowers, cleaning out at 1,000 feet; Prince Brothers' No. 1 Zipperle, oil showing at 1,780 feet; South Vernon Oil Co.'s No. 4 Stephens, drilling at 1,280 feet; same company's No. 5 Stephens, drilling at 1,405 feet; Staley and others' No. 1 Waggoner, drilling at 250 feet; Tippit and others' No. 1 Sheldon, drilling at 1,700 feet; Waggoner and others' No. 1 Bond, drilling at 250 feet; Winnipeg Oil Co.'s No. 3 Bond, drilling at 1,150 feet; Wells and others' No. 2 Waggoner, dry gas at 1,205 feet.

Baylor County: Dallas Oil Co.'s No. 1 Shawver, drilling at 1,865 feet; Lehman and others' No. 1 Shawver, fishing at 980 feet; Magnolia Petroleum Co.'s No. 2 Portwood, drilling at 900 feet.

Clay County: Evans and others' No. 1 Culver, drilling at 850 feet; Finley Development Co.'s No. 4 Scott & Ramsdell, testing a sand at 1,185 feet; Sullivan and

(Continued on Page 100)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Nov. 22.—Official figures show that of the crude petroleum consumed in Canadian refineries, approximately 1½ per cent is produced in Canada. The remainder is imported, largely from the United States, with increasing imports from the Peruvian fields. The actual figures show that while the crude oil imports for the fiscal year ending March 31, last, amounted to 11,965,468 bbls., the native crude production totaled only 170,169 bbls. Figures so far available for the current year are, of course, incomplete, but indicate the imports of crude are still further increasing. On the other hand, the 1923 crude production showed a drop of approximately 9,000 bbls.

Practically all the Canadian crude comes from a small section of southwestern Ontario, with a few thousand barrels produced in New Brunswick and a slightly smaller quantity in the Okotoks Field of southern Alberta. The Fort Norman area does not contribute to the production returns, and the Irma-Wainwright Field of east central Alberta is not yet shipping crude, and its potentialities as a producer have not been finally determined.

In natural gas production, Ontario still leads the Canadian provinces, with a total of more than 8,100,000,000 feet in 1923, Alberta coming second with 6,000,000,000 feet and New Brunswick third, with approximately one-third the Alberta production. The Ontario Fields are, however, declining while the Alberta production is increasing steadily.

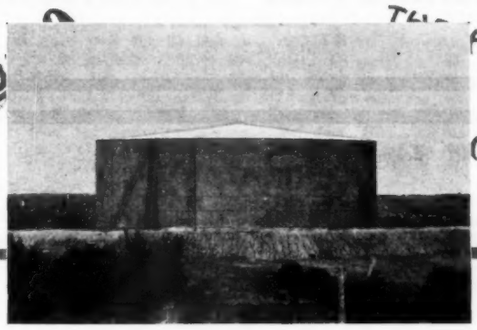
Deep drilling tests in Ontario are again at a standstill, with the completion of a series of unproductive wells. The effort to develop production in the proximity of the Glenwood Natural Gas Co. well on the Shanks farm in Romney Township, Kent County, has pretty definitely failed; and the fact that the Union Natural Gas Co. test on the J. Shanks, approximately 1¼ miles in a northeasterly line from the Glenwood-Shanks was drilled to the bottom of the Trenton without securing the slightest show of gas in that formation indicates that the Glenwood-Shanks production in the bottom of the Trenton was a "freak." The Glenwood-Shanks has been put on the pump; it is being pumped about one day every week, but is making as much as when it was pumped daily. Definite figures are lacking but it would probably not run over 100 bbls. a week. The Union-Shanks after the failure of the deeper test was finished as a gasser in the Tilbury sand.

Farther west in Essex County, the Southern Ontario Gas Co. test near Colchester, between Harrow and Arner, is full of water, after drilling to 2,905 feet or practically to the granite. This test got nothing. In Dover East Township, Kent County, the Eugene Coste & Co. No. 7 on the Matt Boyle farm near Bear Line finished in the granite, being a dry hole; an exceedingly small puff of gas in the upper part of the Trenton being the only show encountered.

In shallow drilling Union Natural Gas Co.'s No. 253 on the Carr farm, on the

(Continued on Page 100)

5 RING 55 7 RING



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Inspect Horton tanks after they have been in service for a while. They will look like the above *unretouched* photograph, taken after the tank had been in service for eighteen months. There are no leaks; the roof is in perfect condition; the tank is as true as the day it was completed. This is only one of a farm of Horton 80,000-barrel tanks; they all look the same.

The purchasing agent who signed the order for these tanks has had his judgment justified by the tank performance. You can have the tanks you buy turn out an equal credit to you.

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HORTON

California Field Operations

By L. P. Stockman

E. J. Miley's No. 1 Athens, Rosecrans, flows 1,350 bbls., reported finest core samples in California. Extends northern boundary three-quarters mile northwest into another town lot area. Shell Co.'s No. 12 Reyes makes 1,925 bbls. in Dominguez. Rideout Heights regarded with pessimism.

LOS ANGELES, Cal., Nov. 24.—The most important development in California during the past week was the completion of E. J. Miley's No. 1 Athens, a wildcat at Rosecrans. This new well is of particular importance because it extends the northern limits of the field about three-quarters of a mile northwest and opens up for development another town lot area. Miley's new well was drilled to 4,947 feet, a string of 6⅝-inch being set at 4,915 feet and the 4¾-inch landed at 4,000 feet. The latter string was put in so that the well could be killed if a shutoff had not been secured. The current was drilled out early Tuesday morning, November 19, and bailing was started 4 o'clock that afternoon. At 10 o'clock in the evening the well started to flow but since most of the initial output was mud, water and cement, it did not look as though a water shutoff had been secured. The first oil began to appear at 11 o'clock and in less than an hour the fluid had cleared up and the well started flowing at the rate of 1,350 bbls. a day, the oil testing 36.2 degrees and showing a cut of 1 per cent. In drilling No. 1 Athens, Miley found several small showings at 4,905 feet. Ten feet later the showings increased and, as drilling and coring continued, the showings improved. The last 20 feet drilled was cored solid and showed it is reported, the finest core samples ever taken from a well in California. These cores were so rich that they carried the odor of straight gasoline.

Will Stimulate Drilling

No. 1 Athens is approximately 25 feet shallower than the Union's No. 1 Howard Park, a little less than 1 mile to the south. Miley's new well will undoubtedly stimulate drilling in this section of the field, heretofore regarded as doubtful, and result in the resumption of drilling in several holes which have been suspended for some time. In addition to the many individual holders of leases in this new town lot section, the holdings of the Petroleum Midway, Sentinel, Julian Petroleum, Federal Drilling and several others look good. Miley's No. 2 Athens, on another lease and in proven territory, is looking good at 4,676 feet and should be put on a test shortly as a tight shutoff has been secured at 4,650 feet.

None of the four Miley-Marland wells which were scheduled to be finished during the past week was turned loose. A drill collar and bit lost in No. 1 at 4,422 feet is delaying the completion of this well, while water trouble is handicapping Nos. 2 and 3. No. 2 has been recemented at 4,354 feet, while another cement job will be necessary in No. 3 at 4,126 feet. No. 4 has temporarily suspended pending the completion of one of the other three wells on the lease. It had been expected that several other wells in addition to Miley's No. 1 Athens would have been put on production tests during the past week, but fishing jobs, water tests and cement jobs held up the final work. The Associated met setbacks in No. 1 Brockley and No. 1 Hoge, both of which tested wet and were recemented. The Barnsdall-Union took a core in No. 2 O'Dea at 3,998 feet but the sample showed the formation to be a hard gray sand which did not react to the ether test. The same interests are swabbing No. 2 Rosecrans at 4,106 feet for a water test. No. 3 on the same lease, is held up while the crew fishes for a lost drill collar and bit. Judging by core samples, the Superior will get a fairly good well in No. 3 Maxwell, not at 4,480 feet. It is believed the company will run in the oil string within a few days and complete the well shortly after.

The Shell ran into a fishing job in its wildcat, No. 1 Leonis, north of the field, at 4,187 feet, but the Pan-American is making good progress and shows 4,223 feet of hole in No. 1 Anderson nearby. The Union's operations were not productive of any new wells, although one or two holes look quite favorable. The Union-Barnsdall has six drillers on the Howard Park lease, two standing cemented, two fishing and two drilling ahead at shallow depths. The two wells standing cemented and which look good for production are No. 3 at 4,944 feet and No. 6 at 4,685 feet.

The Petroleum Midway (California Petroleum), following the completion of E. J. Miley's No. 1 Athens, has staked a location for No. 1 Folsom nearby and is hauling in material for the first rig. The Standard has reached a depth of 5,190 feet in No. 1 Cowan, an eastern outpost well, which has only a small chance of securing production. True to expectations and precedent, the Union Oil Co.'s No. 4 Rosecrans, a big well finished a few weeks ago, has registered a substantial drop in production. Practically all of the producers in this field showed a fast decline and this well proved no exception. The following list shows the initial completion of each well in the field to date and the present output of each:

Name—	Init. Prod. Bbls.	Present Prod. Bbls.
Associated, No. 1 Higgins	840	390
Barnsdall, No. 1 O'Dea	1,400	630
Barnsdall, No. 1 Rosecrans	862	350
Bankline, No. 1 Gordon	410	130
Gen. Pet., No. 1 Vaughn	100	Off
Superior, No. 1 Maxwell	1,110	250
Union, No. 1 Chandler	360	Off
Union, No. 1 Gray	1,100	150
Union, No. 1 Howard Park	700	600
Union, No. 1 Padelford	120	Off
Union, No. 4 Rosecrans	2,500	1,500

Dominguez

The Shell Oil Co. finished the only new well put on production at Dominguez during the week by bringing in No. 12 Reyes. The company's new producer, although it is credited with an initial production of 1,925 bbls. of 31.2 gravity oil, was a little disappointing, since many expected this would be one of the best producers in the field upon completion. The well, however, is a very satisfactory one and since the pressure is 516 pounds to the square inch, it should not show any immediate decline. It was drilled to 4,054 feet and finished with a 6¼-inch oil string carrying 390 feet of 60-mesh screen. The company's two outpost wells, No. 1 Hellman in the north and No. 2 Child's in the northwest, are still on the drilling list. The former shows 5,635 feet of hole, while the latter has just been recemented following a test of the plug at 3,965 feet. The Shell's operations on the Manuel lease should be productive of at least one new well very shortly as No. 1 shows 4,067 feet of hole, No. 2 at 4,000 feet and No. 3 at 3,885 feet.

The Associated should add at least one new well on its De Francis leases adjoining this property on the west, as three of its six holes are approaching the 4,000-foot level. The Marland's No. 2 Dominguez, finished last week at 1,910 bbls., is still holding up very satisfactorily and presages success for No. 3 now at 4,226 feet and No. 4 at 4,271 feet on the same lease. The same company has spudded in No. 5 and is drilling ahead at 460 feet. The Birch Oil Co. shows 5,353 feet of hole in No. 1 Humphries in the extreme western part of the field and, although the outlook is not very encouraging, the company is going ahead. The United Oil Co. shows 4,056 feet of hole in No. 2 Dominguez, 670 feet in No. 3 and a rig up for No. 4. The Henderson Petroleum is erecting a rig for the first well to be drilled on the recently acquired Del Amo property. The company's new lease adjoins the Shell's Manuel property on the north and recent developments indicate that at least the southern part should be productive. No. 1 Del Amo is an offset of the Shell's No. 5 Manuel and a neighbor of the same company's No. 21 Reyes.

Torrance

The Petroleum Securities and Standard Oil Co. each finished two new wells in the Torrance area, but none was of any consequence. The Standard's No. 24 Marble fee made 275 bbls. of 20.1 gravity oil on the beam from 3,800 feet; No. 1 Ross Community of the same company, pumped a little better than 100 bbls. from 3,826 feet but the cut, 20 per cent, was unusually large. It is quite possible after the oil has cleaned up the well will show a proportionate increase in production. The Standard has several prospective pro-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

H. H. Rogers, November 10, New York, crude	117,585
K. H. Kingsbury, November 12, New York, crude	85,920
Agwipond, November 12, New York, crude	90,510
Robert E. Hopkins, November 14, New York	74,996
Miller County, November 15, New York, crude	78,492
Aladdin, November 16, New York, crude	79,808
Coastwise	
D. G. Scofield, November 10, Richmond, crude	78,397
Wm. F. Herrin, November 10, Linnton, fuel	50,670
El Segundo, November 11, Astoria, refined	30,095
J. A. Moffett, November 11, Richmond, crude	64,111
Los Angeles, November 11, Martinez, crude	77,802
W. S. Miller, November 11, Richmond, crude	74,397
Deroche, November 10, Oleum, crude	76,760
Utacarbon, November 12, Martinez, crude	75,463
Los Alamos, November 12, Seattle, refined	42,156
Warwick, November 14, Seattle, refined	45,891
Frank G. Drum, November 14, Linnton, fuel	73,960
D. G. Scofield, November 14, Richmond, crude	79,086
Emidio, November 14, Portland, refined	62,380
W. S. Miller, November 15, Richmond, crude	75,403
Los Angeles, November 16, Martinez, crude	75,663
Meton, November 15, Everett, fuel	72,109
Exports	
San Felix (Br.), November 10, Tampico, crude	125,699
Cordelia (Br.), November 12, England, refined	65,116
Lompoc (Br.), November 14, England, refined	75,204
Montebello, November 15, Chile, fuel	87,906
Mina Brea (Br.), November 16, Vancouver, crude	48,372
From San Francisco	
China Arrow, November 10, Japan, refined	91,206
Lebec, November 10, Seattle, fuel	63,149
W. S. Porter, November 12, Linnton, fuel	56,373
R. J. Hanna, November 12, Point Wells, fuel	77,369
Lubrico, November 12, Seattle, fuel	86,230
Richmond, November 12, Seattle, fuel	63,876
J. A. Moffett, November 13, Astoria, fuel	64,712
Charlie Watson, November 14, San Diego, refined	16,492
From Port San Luis	
Oleum, November 11, San Diego, fuel	31,960

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Nov. 22.—There were some 53 wells completed in Mexican fields during the month of October, two less than in the month of September. Of the October completions, 20 wells can be placed in the production column, although the new production, (potential head) of 55,820 bbls. credited to the month came principally from three wells belonging to Transcontinental Petroleum Co., in the Cacalilao and Paciencia sectors of the northern fields. The northern fields had a total of 17 producers with new production of 53,620 bbls.; the south fields had three, with 1,600 bbls. The northern fields scored 29 failures and the south fields 4.

New Completions

Huasteca Petroleum Co. (Mexican Petroleum) carried all the honors the past week in the matter of pay completions. The two Tierra Blanca wells have already been reported, and No. 48 Cerro Azul commented on. The latter well is now termed completed at a subsea level of 1,148 feet, rated 10,000 bbls. This is the shallowest well ever drilled in Cerro Azul, and, for that matter, it is about the shallowest well of real capacity for production ever drilled in the Republic.

In the northern fields, the best completion for the week was Transcontinental Petroleum Co.'s No. 92, Lot 4 Cacalilao, which is rated 2,500 bbls. at 2,035 feet. La Corona Petroleum Co., same sector, same lot, has a 500-bbl. well in its No. 140, completed at 2,123 feet, but No. 141 is a salt water well at 2,200 feet. International Petroleum Co. No. 76, Lot 5, same sector, is a salt water well at 2,240 feet. In the Lomas y Llanos sector, Lot 13, Gilliam and others brought in a surprise in his No. 2 at 2,320 feet, rated around 1,000 bbls. This well is located over in the eastern part of Lomas y Llanos, not far from the Punta Arena bend in the Panuco River. It is virtually wildcat.

At Ebano, Mexican Petroleum Co.'s No. 48 La Dicha is a dry hole at 2,480 feet. In Topila, Mexican Fuel Co.'s No. 14 Santa Fe has a showing of only 25 bbls. at 2,510 feet.

In the south fields, Cias. del Agwi, No. 25 Laguna de Tamiahua developed salt water at 2,504 feet, in presumably, the Chicontepec series.

Field Operations

In the Cacalilao sector of the northern fields, drilling operations the past week were as follows: La Corona Petroleum Co., No. 144, Lot 4, cemented 8-inch in the San Felipe at 1,200 feet. International Petroleum Co.'s operations in Lot 5 follow: No. 34, rigging; No. 35, drilling in the San Felipe at 1,275 feet; No. 65, rigging; No. 103, the same; No. 121, drilling in the San Felipe at 1,240 feet; No. 123, drilling in shell at 1,180 feet; No. 124 and No. 127, rigging; No. 102, drilling in white lime at 2,140 feet;

(Continued on Page 108)

ducers on the Sentinel-Joughin and Marble fee leases and it would not be surprising if No. 18 Sentinel-Joughin and Nos. 23 and 28 on the Marble fee property were finished during the coming week. The two new wells of the Petroleum Securities were both located on Kleinmeyer Lease A. No. 6 pumped 74 bbls. of dirty 16.6 gravity oil from 3,805 feet, while No. 8 pumped 70 bbls. of 15.9 gravity oil from 3,810 feet. Both were finished with 6¼-inch oil strings, the former requiring 280 feet of screen and the latter 275 feet. No. 7 at 3,530 feet and No. 9 at 3,515 feet should be the company's next completions. None of the several deep tests being drilled in the field showed any encouragement during the week. The Lora J's No. 1 Lomita is drilling ahead at 4,645 feet, while the Shell's No. 2 Kettler shows 5,150 feet of hole and the Chanslor-Canfield Midway Oil Co.'s No. 1 Francis, 6,145 feet.

The McKeon Drilling Co. has been experiencing considerable difficulty in putting No. 2 Torrance on production at 3,792 feet. It is quite probable the hole will have to be cleaned out to bottom before the well will respond. The Consolidated Mutual Oil Co. has suspended all drilling work at Torrance, due, it is reported, to lease complications. The Fullerton Oil Co. is rigging up No. 9 Cotton fee and is scheduled to start work on this new hole within a few days. The Superior has finished cleaning out No. 13 Torrance at 3,856 feet, No. 50 Torrance at 3,841 feet and should complete No. 51 at 3,820 feet as a new well. The company has just succeeded in putting No. 54 Torrance on the beam and has a 115-bbl. pumper, the oil testing 18.1 degrees and showing a cut of 4 per cent. The hole was originally drilled to 3,836 feet but later plugged back to 3,826 feet because of water trouble. An 8⅝-inch liner carrying 200 feet of 60-mesh screen and 2,500 feet of 3-inch tubing was used to finish the well.

Long Beach

There was very little work of interest at Long Beach during the week, except the outlook for production in one or two cases. The A. T. Jergins Trust will deepen No. 14 Municipal, now at 4,275 feet, following its refusal to produce from this depth. Lon Anger is cleaning out his well No. 3 at 4,650 feet and will try for production shortly. The Mutual Oil Co. is bailing well No. 3 at 3,858 feet but so far it has only shown a fair kick.

Hunting Beach was just as devoid of new wells and work of special importance as was Long Beach. A heaving sand prevented the completion of the Golden Dome Oil Co.'s No. 1 Ward at 3,305 feet and as a result some additional work will be required. The Standard lost 625 feet of hole by the abandonment of well No. 26 on Lease A because of mechanical trouble. The rig was being skidded to a new location and a new hole started. The company is tubing well No. 20 on Lease B, drilled to 4,443 feet, and will try for production. The Petroleum Midway succeeded in returning Twin 2 on Mattern lease No. 2 to production at Santa Fe Springs during the latter part of the week, but water continues to cause trouble. The latest test showed 1,368 bbls., but shortly after being opened up water again made its appearance and seems to be increasing in quantity, one tank showing a cut of 50 per cent water. Another cement job seems to be in order.

San Joaquin Valley

There was no great variation in the amount of development work done in the San Joaquin Valley fields during October, compared with September. In the Coalinga Field there were seven wells drilling in October, compared with nine during September. Only one new well was finished, the Pacific Oil Co.'s No. 108 in Section 25-20-14, which was a 25-bbl. pumper from 1,514 feet. Conditions in this field were very stable. Operations in the Kern River Field were just about on a par with those during September, but the Midway-Sunset area showed a slight improvement. Three wells were finished at Maricopa, good for 175 bbls. daily in the aggregate. Both the Big Ten in Section 36-32-23 and the Formax in the same section finished 75-bbl. pumpers. The former's No. 9 was drilled to 1,141 feet, while the latter's No. 17 was put on the beam at 1,188 feet, the oil in each case testing approximately 14.5 degrees. The Pliocene Oil Co.'s No. 3 in Section 18-11-23 was only good for 25 bbls. a day of 12.5 gravity oil when put on the beam at 816 feet.

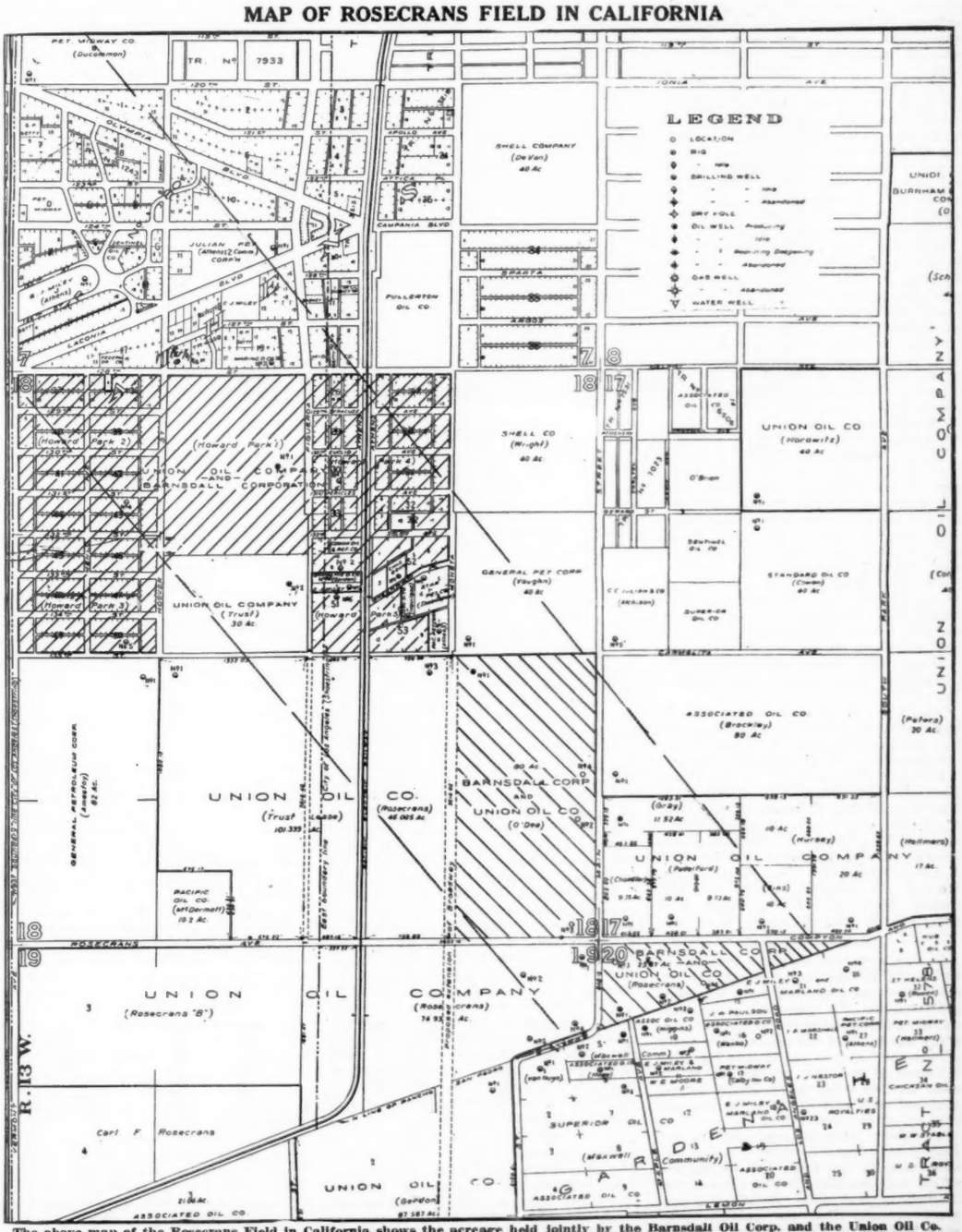
There are 25 holes being drilled at present in the Maricopa Field, some of which look good for early production. Both the Ethel D's No. 1-A in Section 36-12-24 at 2,280 feet and the Kendon Petroleum's No. 3 in Section 35-32-24 at 2,545 feet should be finished within three or four weeks. The Union's No. 3 Federal in Section 4-11-23, as well as the Mascot's No. 4 in Section 36-32-23 and the Surprise's No. 10 on the same section, are also good bets. The Pacific is only drilling one well in this field, No. 11 in Section 3-11-23, which has reached a depth of 4,695 feet. The General Petroleum has three holes to its credit, but three new rigs erected during the month forecast additional work during the next 30 days. On its Sunset lease, Section 18-11-23, the company is drilling ahead in No. 226-A at 780 feet and is making hole in 314-B at 756 feet. No. 312-A on the same property, a workover, is being cleaned out at 650 feet. In Section 35-12-24, the company evidently anticipates an early completion in No. 396, now at 987 feet, inasmuch as a new rig has been erected for No. 395. Two new rigs have been erected in Section 34-12-24 and it is expected the company will finish rigging up within a week or 10 days. The Associated is not doing any development work on its several leases in this field, although the company has eight or ten holes at various depth which have been standing idle for a few months. The Standard is running only two strings of tools, one on the M. J. M. & M. lease, Section 36-12-24, and the other on the Ross lease, Section 10-11-23. On the former property, No. 55 shows 2,128 feet of hole, while on the latter, No. 1 is drilling ahead at 4,688 feet.

Midway Field

Notwithstanding the fact that there were more new wells finished in the Midway Field during October than were placed on production during September, the aggregate initial output was considerably smaller. During the past 30 days there was only one really good well finished in this district. The Honolulu Oil Co. carried off completion honors by finishing three new wells, one being the field's premier completion. No. 72 in Section 4-32-24 was good for 1,050 bbls. a day of 27.4 gravity oil from 3,605 feet. No. 71 on the same property, now at 3,580 feet, should be on production shortly. In Section 6-32-24, the company brought in Nos. 37 and 67, the former from 3,000 feet and the latter from 2,970 feet. No. 37 was good for 300 bbls. of 28.1 gravity oil, while No. 67 pumped 135 bbls. of 28.3 gravity oil. On the same

(Continued on Page 94)

MAP OF ROSECRANS FIELD IN CALIFORNIA



The above map of the Rosecrans Field in California shows the acreage held jointly by the Barnsdall Oil Corp. and the Union Oil Co. Of the area shaded with lines drawn downward from left to right, 70 per cent is owned by Barnsdall and 30 per cent by the Union. Of the upper shaded portion, the Howard Park lease, two-thirds is owned by the Union and one-third by the Barnsdall. The long diagonal broken lines were drawn before the Union's No. 4 Rosecrans, in the NE of Section 19, came in good for 110 bbls. an hour, and show the strip that was previously expected to be the cream of the field. As a result of No. 4 Rosecrans, this area my be shifted to the southwest somewhat.

at 4,106 feet for a water test. No. 3 on the same lease, is held up while the crew

La Corona Petroleum Co., same sector, same lot, has a 500-bbl. well in its No.

102, drilling in white lime at 2,140 feet; (Continued on Page 108)

a proportionate increase in production. The Standard has several prospective pro-

National Petroleum Marketers Session

Convention at Cleveland Takes No Action on Proposed Marginal Contract. Oil Exchange Suggestion Also Postponed. Election of Officers

By C. O. Willson

CLEVELAND, Ohio, Nov. 20.—The National Petroleum Marketers Association this afternoon closed what in registrations and in size and variety of exhibits was the most successful convention the association has ever held. More than 1,300 jobbers, refiners and supply men registered during the three days of the convention, which opened Tuesday morning, the total being approximately double that of the spring convention held at St. Louis. Part of the heavy registration is accounted for by the fact that it was necessary to register in order to obtain entrance to Cleveland Public Auditorium where the exhibits were located and where all sessions of the convention were held.

The exhibits of 75 concerns covered the main floor of the auditorium. These exhibits included all the modern equipment used in the wholesaling and retailing of refined products with an especially varied display of visible gasoline pumps. An unusually large number of refiners had booths. A feature of the convention was the $10,000 in prizes given by the exhibitors on the last day.

Deviating from its former policy of having the business sessions devoted exclusively to the informal discussion of problems of interest to the jobbers, the convention was featured by several prepared addresses. In the open forum discussions little that is new was developed. The subjects under discussion were largely the same as had been brought to the attention of the jobbers at previous meetings and the time devoted to this phase of the convention's activities was limited due to the prepared addresses.

Election of Officers

L. V. Nicholas, who has been president of the association for three years and during the greater part of that time devoted his entire time to association work was reelected. Most of the other officers and directors whose terms expired were also reelected. The other officers are: First vice president, S. S. Cramer, Wadhams Oil Co., Milwaukee, Wis.; second vice president, J. L. Murray, Cornbelt Oil Co., Bloomington, Ill.; third vice president, R. E. Gerkins Oil Co., Dayton, Ohio; fourth vice president, W. O. Hudson, Marine Oil Co., New Orleans, La.

The directors elected include all the vice presidents except Mr. Gerkins, who was already a member of the board and the following: A. H. Caward, Hawkeye Oil Co., Waterloo, Iowa; E. H. Hilpp, Kentucky Consumers Oil Co., Louisville, Ky.; E. J. Keitel, Columbia Oil Co., Inc., St. Louis, Mo.; C. L. Maguire, Northland Oil Co., Chicago; Alfred M. Cady, Crown Oil Co., Syracuse, N. Y.; Jack Nourse, Nourse Oil Co., Kansas City, Mo.; F. E. Bergfors, Quincy Oil Co., Quincy, Mass., and L. A. Miller, Aero Oil Products Co., Cheyenne, Wis.

Marginal Contracts

It was apparent that the problem in which the jobbers were primarily interested was that concerned with long time contracts for the purchase of gasoline during the coming year. This was generally the topic of discussion when small groups got together and it was regretted by many it was not possible to devote more time to a discussion of the several proposed contracts in the main business sessions of the convention.

President Nicholas explained to the jobbers his proposed contract which was announced to the trade last month and which was described in The Oil and Gas Journal at that time. Briefly this contract provides that the gasoline price shall be based on the spot market in the territory from which the gasoline is shipped by the refiner with the refiner guaranteeing the jobber a margin of 3 cents between his local tank wagon price and the delivered price at his bulk station which is the spot market plus freight. The jobber agrees to reduce his tank wagon price to the trade whenever it is more than 5 cents above the delivered price and splits with the refiner any margin in excess of 4½ cents.

Since this proposed contract was announced its legal status has been questioned by attorneys representing refiners in the Mid-Continent Field. Mr. Nicholas stated that in his opinion the contract was as legal as those which have been in effect for years and which are based on the tank wagon quotations of the large distributors. He declared the proposed contract would do away with the wide margins between the tank car and tank wagon prices which have brought public criticism and which have been responsible for many newcomers in the jobbing end of the oil business. He said it would also free the independent jobber from the dominance of the large integrated organization in establishing wholesale and retail prices.

Waiting on Refiners

There was no general disposition among the jobbers' present either to approve or disapprove the proposed contract. Most of them apparently were waiting to determine the attitude of the refiners. This so far as the convention was concerned, was expressed by John Carson, in charge of the Chicago sales office of Cosden & Co. Mr. Carson said his main objection to the contract was that it did not provide adequately for advance in tank wagon prices when the price trend at the refineries was upward. He also said it had been his company's experience it was useless to attempt to establish maximum margins to the jobbers too many of whom would buy at the lowest price obtainable regardless of the terms of a contract.

He advocated the new Cosden type of contract which is based on the spot market with no minimum or maximum margins except a minimum price based on the price of crude oil. He said this type would enable the refiner to determine definitely just what gasoline he could expect to move on long time contracts and prevent the large storage accumulations of the past which were the direct result of the jobber failing to carry out the contracts of the past when they are unfavorable to them. This type of contract has found favor with many jobbers since it was announced.

Advertising Program

The Independent Oil Men of America, the advertising branch of the association, will shortly announce a national name for gasoline and lubricating oils to be sold by the members of the advertising branch. This is one more step in the effort of the independent jobbers to secure continuity in the sale of independent products. It was stated the adoption of a definite trade mark for their products would be joined with an enlarged advertising program which would be national in scope.

Marketing Department

The directors of the association were directed to establish a marketing department at the Chicago headquarters of the association to act as a buying agency for its membership. It was not made clear just how the department was to function, this feature being left to the discretion of the association's directors and officers. The action was taken at the close of a discussion as to "What Constitutes a Legitimate Distributor?" In this discussion several speakers condemned the selling of gasoline and other products by State or municipal governments, automobile agencies, garages or any other concern which conducted its sales merely as a sideline but was nevertheless able to purchase its supplies from the refiners at the same tank car price paid by the legitimate jobber.

Speakers contended the establishment of a central buying agency would tend to minimize this evil and would serve to aid both the refiner and the jobber. Many jobbers present promised to give the plan a fair trial by purchasing a part of their requirements from the marketing department. The sales are to apply both to spot purchases and long time contracts. Although not definitely stated it is assumed the department in so far as spot purchases is concerned will largely serve the field now covered by marketing or broker organizations.

It was stated that the association had handled purchases of gasoline for a few of its members during the past year and the transaction had proved satisfactory both to the buyer and seller. One of the features stressed in the discussion was the need of a uniform marginal contract covering sales of gasoline.

Motor Dopes

Although no formal action was taken it was apparent that a majority of the jobbers present were opposed to what was termed "motor dopes." The discussion of this problem was headed by J. L. Murray, president of the Cornbelt Oil Co., Bloomington, Ill.

Jobbers have taken the matter of fuel dopes too seriously, Mr. Murray said. He declared that with rare exceptions they have not proved serious competition for the jobbers who have refused to handle one or more of the several kinds offered to the trade. He said the Illinois Petroleum Marketers' Association of which he is president had sent out questionnaires to jobbers in Illinois with the view of ascertaining their attitude regarding the dopes. He said less than 10 per cent of the jobbers had attempted to market the dopes and 80 per cent of the jobbers stated in their opinion the dopes were worthless. He also stated the sellers of the dopes were in most cases garage owners or other sellers having no direct connection with the oil business. Attempts made to bring up for discussion the individual merits of certain makes of dopes offered to the trade failed.

Publicity

The only address on publicity was delivered by Robert S. Binkerd, vice chairman of the Committee on Public Relations of the Eastern Railroads, New York. Mr. Binkerd's address was devoted largely to an explanation of how the railroads had handled publicity with the view of educating the public in regard to the problems of the railroads. He attributed the present more friendly attitude of the public toward railroads as a direct development of the campaign of education which has impressed on the public mind the importance of an efficient railroad system and its direct connection with the wellbeing of all industrial life.

Uniform Lubricating Oils

W. A. McMillan, vice president of the Lindsay-McMillan Co., Milwaukee, told the jobbers present there was a need for a uniform lubricating oil to be sold in competition with the nationally advertised brands manufactured by their larger competitors.

He suggested this matter be given consideration by the newly created marketing department of the association with the view of determining the desired specifications of a uniform kind of lubricating oil which would be available to all independent jobbers. He said at the present time the nationally advertised brands varied widely in quality. He displayed a chart giving the viscosities at a temperature of 210 degrees Fahrenheit of all grades of several widely known lubricating oils in proof of his contention that they varied widely in quality and were therefore confusing to the consumer. This chart was based on laboratory tests conducted by his company.

"Let us handle our own products and sell our own goods," he said, "but with the added impetus of the independent insignia we can get a uniform oil that will have it all over the nationally advertised oils so far as quality is concerned. I think we ought to have a committee go into the proposition of what a light oil is, what a medium oil is and what a heavy oil is, and what an extra heavy oil is and let us at least have one brand of oil that we can sell as independent oil to live up to these specifications.

"My suggestion is that a light oil ought to be about 50 viscosity at 210, medium 60, heavy 75, and extra heavy 100. Your extra heavy is twice as heavy as your light and your heavy is 50 per cent heavier than your light and you have a definite tangible basis on which to work.

Oil Exchange

Without discussion the members voted to refer to the board of directors for further consideration the proposal to organize an oil exchange which would function the same as a stock exchange in the sale of crude oil and refined products.

ADDRESSES AT CLEVELAND

The addresses delivered by H. L. Doherty on the condition of the oil industry and J. W. Hallman on "Credit" were published in The Oil and Gas Journal of November 20.

The address of D. E. Buchanan, president of the Association of Natural Gasoline Manufacturers, will be found on page 88 of this issue.

The address by C. L. Maguire on "Merchandising of Domestic Fuel Oil and Distillate" will be found on page 103 of this issue.

INDIAN OIL OPERATIONS

The annual report of the Commissioner of Indian Affairs to the Secretary of the Interior says that during the past fiscal year oil and gas operations were less than normal, owing to previous overproduction, but the leasings reached 226,910 acres; the gross oil production was 49,640,458 bbls. and the total revenue $29,145,517. One 160-acre tract on the Osage Reservation, Oklahoma, was leased for nearly $2,000,000 and several others for more than $1,000,000 each. The total income to the Osages from oil and gas was $24,670,483. A sale of oil and gas leases on the Navajo Treaty Reserve, New Mexico, netted the Indians $80,598. The gross oil production for the Five Civilized Tribes, Oklahoma, was 10,665,492 bbls., yielding a total income of $3,580,007.

INDIAN PIPE LINE

Indian Pipe Line Corp. reports the handling of 60,698.90 bbls. through its Kentucky lines during the month of October. Of this amount, Allen County furnished 30,664.52 bbls.; Warren County 17,265.60 bbls.; Ohio County 9,550.76 bbls. and Hancock County 3,218 bbls.

the same section finished 75-bbl. pumpers.

broken lines were drawn before the Union's No. 4 Rosecrans, in the NE of Section 19, came in good for 110 bbls. an hour, and show the strip that was previously expected to be the cream of the field. As a result of No. 4 Rosecrans, this area my be shifted to the southwest somewhat.

It Was a Terrific Fire—But Wilson-Welded Tanks *Held!*

The fire started in a city storage yard and spread to the gas and oil station of the oil company. There were one 18000-gallon tank, two 12000-gallon tanks, and one 500-gallon truck tank—all Wilson-Welded. From the relief valve of the largest tank shot a jet of flame 40 feet long, but when the fire was over more than 3000 gallons of gasoline remained in the tank—and "the tank was not much hurt". The intensity of the heat is indicated by the blisters and bulges revealed in the photograph reproduced above. And to all this "grief" was added the strain of falling to the ground when the steel supports gave way. Yet, only one seam broke—and that on the truck tank. May we tell you more about Wilson-Welding? No obligation incurred.

WILSON WELDER & METALS CO. INC.
Wilson Bldg. Hoboken, N. J.

Canadian Distributors: G. D. Peters & Co., Ltd., Montreal

WILSON

WELDING MACHINES AND WELDING WIRE

Oklahoma Field Operations

By C. D. Lockwood

Papoose Pool extended half mile eastward by well which starts at rate of 110 bbls. hourly. Two dry holes in Tonkawa deep sand area. Wildcats in Lincoln and Seminole Counties get showings. Good completions swell production from Papoose Pool. Output of Watchorn Pool increases.

The extension of the Papoose Field a quarter of a mile eastward with a well which started off at 110 bbls. the first hour, the addition of a couple of producers to the Tonkawa deep sand wells, and a couple of showings in wildcats featured the week in the Oklahoma Fields.

The Papoose Field extension was drilled by the Independent Oil & Gas Co. in its No. 1 S. Alexander, C NW NE NE, Section 2-9-9. It topped the sand at 3,344 feet and when drilled in 10 feet, started off at the rate of 110 bbls. the first hour. The same company's No. 2 Alexander, C SW NW NE, same section, also extended the producing area a location south when it came in good for 60 bbls. hourly from sand at 3,332-42 feet. The Prairie Oil & Gas Co.'s No. 1 Westbrook, C SW NW SE, Section 35-10-9, topped the sand at 3,314-31 feet and made 150 bbls. an hour. It was holding up steadily to that figure. The Kingwood Oil Co. shot its No. 1 Hamilton, C SE SE SW, Section 35-10-9, west offset to T. B. Slick's No. 1 Sand, and after treatments of 3, 5, and 7 quarts the output jumped from 5 bbls. to 37½ bbls. an hour. T. B. Slick brought in his No. 2 Grayson, in the NE cor. of Section 3-9-9, and it started at 75 bbls. hourly from sand at 3,309-17½ feet. The Indian Territory Illuminating Oil Co.'s No. 2 Williams, offsetting this well to the north, was nearing the sand and due in at any time. The Gypsy Oil Co.'s No. 1 Williams, SE cor. SW SE, Section 34-10-9, was down to 1,100 bbls. Its initial production was 1,885 bbls. On the other hand, the Kingwood Oil Co.'s No. 2 Hamilton, SW cor. Section 35, was steadily increasing in production, making 2,834 bbls. last Friday.

The northern limits of the deep sand pool in the Tonkawa Field appears defined as a result of two failures drilled by the Phillips Petroleum Co. on the Goltry lease, in Section 34-25-1w. The company's No. 4, SW cor. NE NE, topped sand at 4,214 feet and at 4,222 feet the hole filled up 2,000 feet with oil. At 4,224 feet, however, a hole full of water was found and the well was shut down at 4,232 feet. The company's No. 5, a location east, topped sand at 4,208 feet and was shut down at 4,214 feet with a hole full of water.

Tonkawa Producer

The fortieth Tonkawa deep sand producer was the Amerada Petroleum Corp.'s No. 37 Goltry, SE cor. NW NE, Section 34-25-1w. It reached the sand at 4,034 feet and was deepening Monday at 4,085 feet. First 24 hours' production on the twentieth was 1,826 bbls. and on the twenty-second it made 2,372 bbls. dropping Sunday to 2,103 bbls. The Gypsy Oil Co. finally succeeded in bringing in No. 82 Shawver, NE cor. NW NW, Section 2-24-1w, which has been delayed for months by fishing jobs. It made 75 bbls. the first hour from sand at 4,070-4,125 feet.

The wildcat showings mentioned above were in Lincoln and Seminole Counties. J. C. Cook's No. 1 De Lozier, SE cor. SW SW, Section 15-14-6, Lincoln County, pumped 22½ bbls. in the first three hours and then the cups gave way and the rods were pulled. The other well was Holm & Jarvis and the Independent Oil & Gas Co.'s No. 1 in the C NE SE NE, Section 7-9-8. It had a show of 40.7 gravity oil that looked good for 90 bbls. some few weeks ago in sand at 3,275-3,391 feet and drilled on deeper. Late last week, it picked up another small showing that caused considerable excitement but proved of little importance. Monday it was reported making two bailers of oil and one of water an hour with total depth at 3,458 feet in shale.

An area that will either develop into a real pool or blow up during this week is the 12-8-8 country, around the Roxana's Buckner well. The discovery well, in the C NW NE NW, Section 12-8-8, which has been producing for a couple of months, was making 2,344 bbls. of oil and 969 bbls. of water Monday from sand at 3,401-05 feet. The Roxana Petroleum Corp.'s No. 1 and Nos. 2 McAllister were both on top of the sand and due to drill in immediately, and the Dixie Oil Co.'s No. 1 Buckner, was drilling at 3,389 feet also.

The Laurel Oil & Gas Co., which has the most northerly well in the Cromwell area in its No. 1, in Section 4-10-8, drilled through the sand at 3,435 feet but did not increase the 100-bbl. production which the well was making. Another sand was found at 3,448 to 3,452 feet, total depth. This well started off at 150 bbls.

Production on Friday

The production of a number of the most important pools in Oklahoma as of Friday, November 21, was as follows: Cromwell, 48,984 bbls.; Papoose, 25,507 bbls.; Stroud, 4,268 bbls.; Otoe and Watchorn, 11,036 bbls.; Tonkawa, 105,707 bbls., of which 83,562 bbls. was from the deep sand wells; Burbank, 72,686 bbls.

The Watchorn Pool in Pawnee County was producing 11,000 bbls. a day toward the close of the week. The Magnolia Petroleum Co. drilled deeper in its No. 5 Miller, in Section 4-22-3 and increased the production from 795 bbls. to 2,479 bbls. a day. The pay lay at 4,070 to 4,083½ feet and the hole was drilled to 4,101 feet. This pool is generally regarded as one of the potentially richest undeveloped spots in Oklahoma. The acreage is owned by three companies, the Watchorn Oil & Gas Co., the Magnolia Petroleum Co. and the Marland Refining Co. and they seem in no hurry to drill it. The well are averaging about 1,000 bbls. a day.

The Oklahoma Producing & Refining Co. drilled one of the biggest gas producers yet found in Creek County, its No. 2 Washington, NW cor. NE SW, Section 32-17-8, which was good for 87,000,000 feet of gas from the Tucker sand found at 2,821-30 feet.

The Independent Oil & Gas Co.'s wildcat test on the Earp farm, SE cor. NE SE, Section 6-15-6, Lincoln County, drilled through sand at 3,770-77 feet and was at a total depth of 3,790 feet. The well was flowing 220 bbls. a day.

Fred Petak and others, who for five years have been drilling intermittently on a deep test in the northwest corner of the southwest quarter of Section 15-8s-26e, McCurtain County, in the extreme southeastern part of the State, are reported to have a sand with a showing of oil at 2,650 feet. They were running 8¼-inch casing to shut off water. McCurtain County is promised a test in the northwest, the Globe Oil & Refining Co. having blocked out a lot of leases. It is said the company will drill its first test in Section 12-1s-27e.

Creek County Completions

Madden & Madden's No. 1 Bishop, SW cor. Section 13-17-8 was a 90-bbl. well after a shot in sand at 2,294-2,323 feet; Aztec Oil Co.'s No. 2 Johnson, SE Section 14-17-8, 210 bbls. after a shot at 2,282-2,318 feet; Savoy Oil Co.'s No. 3 Johnson, SE cor. NW NE, Section 23-17-8, 60 bbls. after a shot at 2,280-2,322 feet; Oklahoma Producing & Refining Corp.'s No. 2 Washington, NW cor. NE SW, Section 32-17-8, 87,500,000-foot gas production from sand at 2,817-30 feet, shut in (an old well drilled deeper); Sartain Brothers' No. 3 Artusse, SW cor. SW NW, Section 32-17-8, 25,000,000-foot gas production, from sand at 2,804-2,835 feet, shut in; the Prairie Oil & Gas Co.'s No. 1 Carr, SW cor. NE, Section 7-14-7, swabbed 35 bbls. of heavy oil and some water from sand at 4,114-65 feet, not completed; Twin State Oil Co.'s No. 1 Cosar, NW cor. SE, Section 7-14-7, swabbed 35 bbls. a day from sand at 4,135-50 feet, not completed; Kawfield Oil Co.'s No. 10 Sewell, NW cor. NE NW, Section 9-15-10 was a 15-bbl. well after a shot at 2,599-2,650 feet; Cumberland Petroleum Co.'s No. 1 Friday, SW cor. SE SW, Section 22-15-10, 125 bbls. a day after a shot at 2,697-2,731 feet; Phillips Petroleum Co.'s No. 1 McIntosh, SW cor. NE, Section 24-14-9, initial production of 900 bbls. from sand at 2,930-67 feet, later reported flowing 695 bbls. a day, naturally; Gladys Belle Oil Co.'s No. 1 Johnson, C SE NE SW, Section 17-14-10, dry and abandoned at 3,470 feet.

The Wilcox Oil & Gas Co.'s No. 10 Miles, SE cor. NE NW, Section 2-15-8, which started off at 1,100 bbls. a day from sand at 3,095-3,118 feet settled down to 700 bbls. At last report the Oklahoma Producing & Refining Co.'s No. 2, SE cor. NE, Section 30-14-8, was flowing 450 bbls. a day from sand at 3,414 feet, drilled in 4 feet. The Prairie Oil & Gas Co. has a rig up for No. 1 Smith, C SE, Section 13-17-8, Lima Oil & Gas Co.'s No. 2 Green, SE cor. NW NE, Section 26-17-8, spudded in; Roland Oil Co.'s No. 2 Morrison, NW cor. NE NE, Section 25-17-8, spudded in; Shaffer and others' No. 1 Tucker, NE cor. SW, Section 17-19-9, a rig up; Steinberger and others' No. 1 Tucker, NE cor. SW, Section 17-19-9, a rig up; Steinberger and others' No. 1, SW cor. Section 20-19-8, drilling at 300 feet; J. B. Cronie's No. 1 Williams, SE cor. NE Section 30-19-8, straightreaming 6-inch pipe at 2,670 feet (drilling deeper); J. E. Crosbie's No. 1 Richard, NE cor. SE NW SW, Section 25-15-7, present depth 3,298 feet, preparing to deepen; Texas Co.'s No. 3, NW cor. NE SE, Section 26-14-8, drilling below 400 feet; C. G. Tibbens' No. 3, SW cor. NW SE, Section 30-15-9, rig up for twin well.

Cromwell's Recent Results

The status of a number of wells recently brought in in the Cromwell Pool was as follows at the close of the week: Sinclair Oil & Gas Co. and Transcontinental Oil Co.'s No. 8 Bruner, C NW SW SW, Section 9-10-8, sand at 3,426-80 feet, 1,200 bbls.; Carter Oil Co.'s No. 3 Brown, C NW NE SW, Section 10-10-8, sand at 3,365 feet, oil at 3,490 feet, total depth 3,535 feet, 158 bbls.: Roxana Petroleum Co.'s No. 3 Berryman, C NW NE NW, Section 10-10-8, top of the sand at 3,180 feet, 181 bbls. first 24 hours; same company's No. 7 Brown, C SW NE SW, Section 10-10-8, sand at 3,400-75 feet, 275 bbls.; McMan Oil Co.'s No. 4 Baker, C NW NW NW, Section 16-10-8, sand at 3,431-3,501 feet, 2,400 bbls.; Waite Phillips Co.'s No. 2 Proctor, C SE NE SW, Section 16-10-8, top of sand at 3,476, total depth 3,523 feet, 15,000,000 feet of gas and 240 bbls. per day; Empire Gas & Fuel Co.'s No. 2 Dunn, C SE SE SE, Section 4-10-8, sand at 3,324 feet, drilled to 3,450 feet, 35,000,000 feet of gas and 25 bbls. a day of oil; No. 3 Dunn, C NE SE SE, Section 4, top of sand at 3,334 feet, drilling at 3,404, 500 bbls. a day; No. 4 Dunn, CSL SW NW SE, Section 4, top of sand 3,440 feet, total depth 3,488 feet, 80 bbls. an hour; No. 5 Dunn, CSL SE NW SE, Section 4-10-8, top of sand 3,391 feet, total depth 3,458 feet, 100 bbls. an hour. Sinclair Oil & Gas Co.'s No. 6 Bunner, C NW NW SW, Section 9-10-8, sand at 3,420 feet, total depth 3,480 feet, 2,280 bbls. initial production, later flowing 1,700 bbls. aday; Pure Oil Co.'s No. 9 Bunner, C NW NW SE, Section 9-10-8, top of the sand 3,345 feet, drilling at 3,384 feet, making 3,000,000 feet of gas; Pure Oil Co.'s No. 10 Bunner, C NW NE SE, Section 9-10-8, top of sand at 3,357 feet, drilling at 3,379 feet, 3,000,000 feet of gas; Sinclair Oil & Gas Co.'s No. 2 Hill, C NE NE NE, Section 9-10-8, top of sand at 3,307 feet, drilling at 3,393 feet, 30,000,000 feet of gas; Carter Oil Co.'s No. 1 Hill, C NW NW NW, Section 10-10-8, top of sand at 3,311 feet, drilling at 3,388 feet, 45,000,000 feet of gas; Carter Oil Co.'s No. 3 Hill C SE NW NW, Section 10-10-8, top of sand at 3,292 feet, drilling at 3,345 feet, 20,000,000 feet of gas; Carter Oil Co.'s No. 1 Little, NW SW NE, Section 10-10-8, top of sand at 3,340-75 feet, drilling at 3,485 feet, 55,000,000 feet of gas; Carter Oil Co.'s No. 2 Brown, C SE NE SW, Section 10-10-8, sand at 3,384 feet, drilling at 3,538 feet, 161 bbls. the first 24 hours; Carter Oil Co.'s No. 3 Brown, C NW NE SW, Section 10-10-8, sand at 3,365 feet to 3,538 feet, 160 bbls. completed; Kingwood Oil Co. and Sinclair Oil Co.'s No. 3 Berryhill, C NE SW NW, Section 10-10-8, sand at 3,325 feet, drilling at 3,540 feet, 12,000,000 feet of gas and 10 bbls. a day; Roxana Petroleum Co.'s No. 2 Berryhill, C SW SE NW, Section 10-10-8, top of sand at 3,309 feet, drilling at 3,440 feet, 60,000,000 feet of gas and 10 bbls. an hour; Roxana Petroleum Corp.'s No. 3 Berryman, C NW NE NW, Section 10-10-8, sand at 3,180-95 feet, drilling at 3,230 feet, 135 bbls. a day; Roxana Petroleum Corp.'s No. 7 Brown, C SW NW SW, Section 10-10-8, sand at 3,400-3,520 feet, 450 bbls.; Snowden & McSweeney's No. 4 Tiger, C SE NW NE, Section 15-10-8, sand at 3,350 feet, drilling at 3,380 feet, 2,000,000 feet of gas; Waite Phillips Co.'s No. 2 Proctor, C SE NE SW, Section 16-10-8, sand at 3,476-3,523 feet, initial production 140 bbls., now making 50 bbls.; Shaffer Oil & Refining Co.'s No. 7 Yahola, C SE NE NW, Section 22-10-8, sand at 3,421-3,500 feet, 75 bbls.; Waite Phillips Co.'s No. 3 Dunn, C E half NE SE, Section 4-10-8, sand at 3,333 feet, drilling at 3,420 feet, 35 bbls. an hour; Carter Oil Co.'s No. 1 Hall, C NE NE NW, Section 9-10-8, top of sand at 3,446 feet, drilling at 3,486 feet, 384 bbls. first 24 hours; same company's No. 1 Hill, C NE NW NE, Section 9-10-8, top of sand at 3,446 feet, drilling at 3,486 feet, 1,000 bbls. first day; No. 3 Hill, C NW NE NW, Section 9, top of the sand at 3,403-92 feet, 1,600 bbls.; same company's No. 1 Starr, C SW SE NW, Section 9-10-8, sand at 3,420-83 feet, 100 bbls. a day; No. 4 Starr, C SE SE NW, Section 9, sand at 3,382-3,415 feet, 3,000,000 feet of gas, shut in.

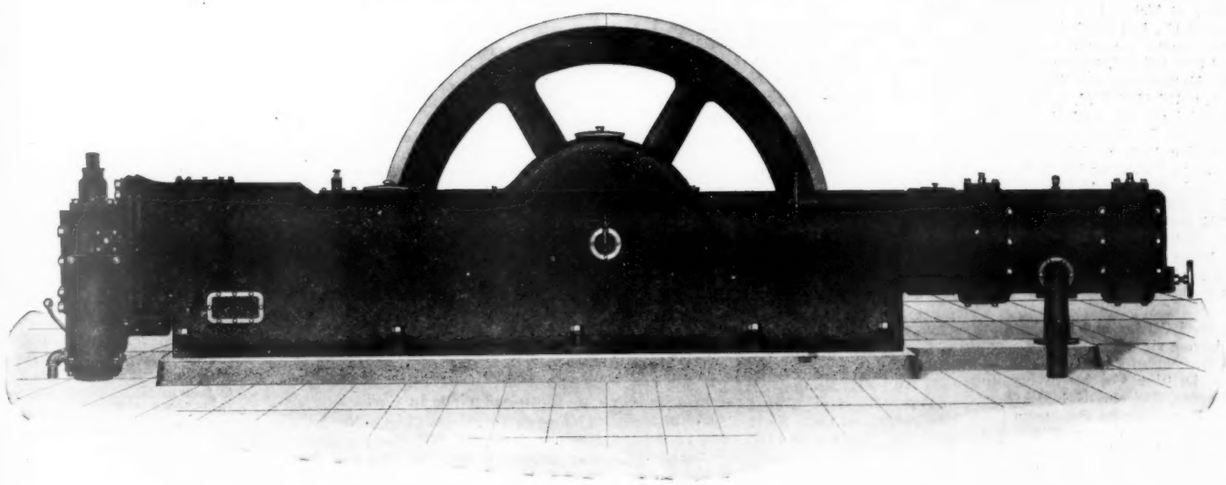
The Southwestern Petroleum Co. has commenced drilling No. 2 Wisner, C SE SW NE, Section 4-10-8; Carter Oil Co. has a rig up for No. 1 Dunn, CSW SW NW, Section 3-10-8; Roxana Petroleum Corp., drilling at 300 feet in No. 2 Yahola, CSW NE SW, Section 3, and h[illegible]

The Watts-Miller

Direct Gas Engine Driven Compressor

Manufactured by

THE MILLER IMPROVED GAS ENGINE CO., Springfield, Ohio



At the booth of The Miller Improved Gas Engine Company at the Petroleum Exposition at Tulsa.

The question uppermost in the visitor's mind was the power operating the Gas Engine.

Some said it was operated by Electric Motor.

A notice was posted warning visitors to keep away from the exhaust pipe to avoid being burnt.

There was no sound so general in Gas Engine exhaust to warn them.

The Watts-Miller Gas Engine Gas Compressor is the smoothest operating machine ever offered the Gas Industry.

This Engine shows no vibration whatever, every joint fits, the whole assembly functions perfectly.

Because of the high class design and care taken in its general construction.

The engine not only runs smoothly—its ease in starting and being absolutely safe.

The accessibility of the Watts-Miller is a feature in itself.

Valves can be removed without breaking a pipe joint or disturbing valve gear.

Don't have to dismantle any parts to make replacements, there is no overlapping, so general in most designs.

The best evidence of any equipment is service—this is what the purchaser is looking for.

These Machines installed and operating are handling considerable more gas than our guarantee.

Highest Quality Throughout.

Beautiful in Appearance.

Extremely Simple Design.

Great Strength in Structure.

A Demon in Service.

a rig up for No. 5 Yahola, CNW NE SW; Cosden Oil & Gas Co. is drilling at 600 feet for No. 6 Toney, CNW NE SW, Section 4; Tidal Oil Co., rig up for No. 1 King, CSW SW NW, Section 14-10-8; White Eagle Oil & Refining Co., drilling at 1,650 feet in No. 1 Curley, CSW NE SW, Section 14; Houston Oil Co., drilling below 800 feet in No. 2 Harjo, CSE NE SE, Section 15; Roxana Petroleum Corp., rig up for No. 2 Proctor, C SE NE SW, Section 16; Cosden Oil & Gas Co. drilling below 800 feet in No. 2 Bunner, CSE NE NE, Section 17-10-8; Sinclair Oil Co., drilling at 300 feet in No. 1 Buckner, C NE NE SE, Section 17; Transcontinental Oil Co., rigged up on No. 1 Bunner, C NW NE NW, Section 25. The Mutual Oil Co. had commenced drilling No. 1 Pierce, CSW SW SE, Section 33-11-8; Prairie Oil & Gas Co. had a rig up for No. 12 Buckner, C NW NE SE, Section 8-10-8; Sinclair Oil & Gas Co.'s No. 1 Fixico, C SE NE SE, Section 5-10-8, drilling at 500 feet.

The Pure Oil Co. lost the hole at 2,430 feet and has started a new hole for No. 3 Bunner, C SW SE SE, Section 9-10-8; Snowden & McSweeney are below 500 feet in No. 1, CSW NW NW, Section 14-10-8. The Tidal Oil Co. and Carter Oil Co. have a rig up for No. 1 King, CSW SW NW, Section 14-10-8. The Houston Oil Co. has started drilling No. 2 Harjo, C SE NE SE, Section 15-10-8. The Cosden Oil & Gas Co.'s No. 2 Bunner, CSE NE NE, Section 17-10-8, was drilling at 300 feet; Transcontinental Oil Co.'s No. 1 Binner, C NW NE NW, Section 25-10-8, a rig; Mutual Oil Co.'s No. 1 Pierce, C SW SW SE, Section 33-11-8, a rig.

The Kingwood Oil Co. and Empire Gas & Fuel Co. have a rig up for No. 1 Simon, C NE SE SE, Section 24-9-8.

The Dixie Drilling Co. has a rig up for No. 3 Parker, SW cor. NE SW, Section 32-8-8. The Magnolia Petroleum Co. has a rig up for No. 3 Frantz, C SW SE NE, Section 32-9-8, and completed No. 2-B Tiger, CNW NW SW, Section 32-8-8 in sand at 3,250-55 feet, the well starting at 350 bbls.

Okfuskee County

Blakely & McDonald's No. 1 Johnson, NE cor. SE SE, Section 28-12-10, Okfuskee County, got sands at 2,942-50 feet and 3,141-53 feet and was being tested on the pump. It showed a 20-bbl. daily production. The Atlantic Oil Producing Co.'s No. 3 Fisher, CSL NW SE, Section 36-12-10 was drilling below 400 feet and a rig is up for No. 2, C SE NW SE, Section 36.

Hughes County

The Magnolia Petroleum Co. has a rig on the ground for No. 3 Logan, C NW SE SE, Section 25-8-7, Hughes County; W. R. Ramsey's No. 1 Cumseh, CNE NW NE, Section 36-8-7 was drilling below 1,100 feet; Magnolia Petroleum Co.'s No. 3 Casey, CNE SE SE, Section 30-9-9, a rig on the ground.

Pawnee County

The Watchorn Oil & Gas Co.'s No. 5 Miller, CWL SW SW, Section 33-23-3, started at 430 bbls. a day naturally from sand at 4,122-32 feet. The oil is of 44 gravity; the same company's No. 9 Miller, SW cor. SE SW, Section 33, made 1,530 bbls. a day naturally from sand at 4,079-4,106 feet. The Magnolia Petroleum Co.'s No. 3 Altaeffer, NE cor. Section 5-22-3, started at 2,198 bbls. a day at 4,051-76 feet. All the wells were old holes drilled deeper.

The Marland Refining Co. was drilling below 300 feet in No. 5 Miller, SE cor. SW NW, Section 33-23-3; The Watchorn Oil Co. was deepening No. 10 Miller, NE cor. SW, Section 33, at 2,765 feet; the Watchorn Oil Co.'s No. 1 Diamond, SE cor. NE NW, Section 5-22-3, was drilling at 800 feet; the Magnolia Petroleum Co. had started drilling No. 3 Ely, SW cor. NW NE, Section 5-22-3.

Haley, Garber & Pulse's No. 1 Phillips, NE cor. SE SW, Section 5-23-5, was shot with 60 quarts in sand at 3,186-3,206 feet and started at 48 bbls. a day on the pump.

The Vick Oil Co.'s No. 1 Miller, SE cor. NE SW, Section 4-20-7, was showing 65 bbls. a day with a 2,000,000-foot gas production after a 40-quart shot at 2,594-2,626 feet. Ed Reese and others' No. 4, Lot 12, Block 3, NW cor. NE NE, Section 17-20-7, Jennings district, started at 300 bbls.

The Twin State Oil Co. has a rig up for No. 4 Fleming, CSL SE SE, Section 8-20-7 and for No. 5 Fleming, CSL SW SE, Section 8. The Cosden Oil & Gas Co. was drilling below 450 feet in No. 7 school land, CWL SW NW, Section 16-20-7.

Lincoln County

The McMan Oil Co. got a 25,000,000-foot gas production with a rock pressure of 1,350 pounds in its No. 1 Bowers, NE cor. SW, Section 1-15-6, Lincoln County, in sand at 3,612-57 feet.

In the Stroud Field Berry and others' No. 1, Lot 12, Block 4, C E half NE NW, Section 12-14-6, was shot with 55 quarts in sand at 4,058-4,170 feet. It made a 50-bbl. well. J. C. Cooke's No. 1 SW cor. Section 15-14-6 had 500 feet of oil in the hole from sand at 3,003-50½ feet.

The Magnolia Petroleum Co.'s No. 1, C SE SW NE, Section 27-15-5, Lincoln County, is drilling at 300 feet. The company has a rig up for No. 1 Booth, SE cor. SW, Section 34-15-5.

In Okmulgee County

In Okmulgee County, the Sheridan Oil & Gas Co. completed a 90-bbl. well in No. 1 Sallee, C N half NW SW, Section 3-15-11, from sand at 1,949-98 feet, shot with 100 quarts. Webster and others' No. 6 Grayson, SE cor. SW NW SW, Section 3-15-11, started at 20 bbls. after a shot in sand at 1,979-2,020 feet. J. J. Schock finished a failure, No. 1 Hill, SE cor. SW NW, Section 23-15-11, abandoned at 2,850 feet. Bud Wilmont's No. 3 Berryhill, CNL NE SE, Section 17-14-13 was dry and abandoned at 1,803 feet. Gillette & Kerr's No. 2 Summers, NW cor. SW SE, Section 8-11-12, was dry and abandoned at 2,716 feet. The Phillips Petroleum Co.'s No. 1 Fish, SW cor. NW SW, Section 18-11-12, was good for 10,000,000 feet of gas from sand at 2,843-47 feet.

The Beggs Oil & Gas Co. was spudding No. 2 Grayson, NW cor. SE SW, Section 3-15-11. The Mountain State Oil Co. and Clark are drilling at 250 feet in No. 2 Roberts, SE cor. NW SW, Section 28-13-11; Anglo-Tex. Oil Co., spudding No. 2 Grayson, NW cor. SW NE, Section 33-12-11; Independent Oil & Gas Co.'s No. 1 Jacobs, NW cor. SE SW, Section 33-12-11, drilling at 2,940 feet. Wooster & Mee's No. 3 Rentie, SE cor. NE NW, Section 31-12-12, drilling at 300 feet.

Completions in Burbank

In the Burbank Field, Osage County, the Carter Oil Co.'s No. 11, SW cor. SE, Section 16-26-6, swabbed 60 bbls. on the first test after drilling into sand at 2,863-2,948 feet. The Phillips Petroleum Co.'s No. 8, SE cor. NE SE NE, Section 18-27-6, was shot with 110 quarts and made 250 bbls. the first 24 hours. The same company's No. 6 Mott, SW cor. NE SW SE, Section 11-27-5, made 600 bbls. naturally from sand at 2,996-3,053 feet. No. 7, SE cor. NW SE SE, Section 11 started at 250 bbls. from sand at 2,996 feet, total depth 3,027 feet. No. 8 SE cor. NE SE SE, Section 11, which was reported last week at 3,800 bbls. initial production was reported making 2,200 bbls. on Saturday. The Marland Refining Co. and Roxana Petroleum Corp.'s No. 4, NW cor. SW SW NW, Section 6-26-6 was plugged on account of water at 2,775 feet. The Carter Oil Co.'s No. 10, NW cor. Section 13-27-5, top of sand at 2,970 oil at 2,977 feet, total depth 3,033 feet. shot in sand at 2,971-3,033 feet, started at 250 bbls.; Phillips Petroleum Co.'s No. 7, C NW SE SE, Section 11-27-5, shot in sand at 2,995-3,051 feet, 300 bbls.

The Peters Petroleum Co. mudded off 2,000,000 feet of gas in its No. 3, NE cor. NE SE, Section 6-22-9. The Marland Refining Co. has a 20-bbl. well in No. 10-B, C N half, NE SE, Section 20-23-8 in sand at 2,313-42 feet; H. C. Gwinnup's No. 1, SW cor. SW NE, Section 6-20-10 was dry and abandoned at 2,720 feet.

C. B. Peters has a rig on the ground for No. 1, SW cor. SE SW SW Section 28-24-9.

Good Wells in Carter

Amerada Petroleum Corp.'s No. 2 Clay, SW cor. NW SW NE, Section 28-5s-1e, was drilling below 650 feet and No. 3 Clay, C N half SW NE, Section 28-5s-1e, Brock district, Carter County.

The Coline Oil Co. had a rig up for No. 2 Miller, C E half NW SE, Section 8-3s-2w; Schermerhorn and others have a rig up for No. 3 McGill, CSW NE SE, Section 8-3s-2w; The Magnolia Petroleum Co. completed a 185-bbl. well in No. 19 Cruce, C N half NE NE, Section 16-4s-2w, in sand at 2,480-2,525 feet. The well made 147 bbls. the second 24 hours; The Twin State Oil Co.'s No. 6 Jefferson, C NW NE SW, Section 25-2s-3w was flowing 150 bbls. a day from sand at 2,813-2,824 feet; Noble & Gault's No. 1 Champion, CSW SE NE, Section 28-1s-3w, had 300 feet of oil in the hole from sand at 3,335-45 feet. The Tidal Osage Oil Co.'s No. 1 Parsons, C SE SW NE, Section 28-1s-3w, pumped 90 bbls. the first 24 hours from sand at 3,343-47 feet.

Westheimer & Daube have a rig up for No. 1 C SW SW SW, Section 27-1s-3w, Carter County. The Levant Oil Co.'s No. 1 Brewer, CNW SW SW, Section 27-1s-3w, is a 10,000,000-foot gasser at 3,192-3,210 feet.

The Humble Oil & Refining Co. has a 700-bbl. well in No. 1 Gregg, C NW NE SE, Section 28-1s-3w in sand at 3,285-3,336 feet. The same company's No. 2 Jennings, C NW NW SE, Section 28-1s-3w, started at 90 bbls. a day from sand at 3,368-95 feet. The same company was drilling below 450 feet in No. 1 Miller, C NE NE SW, Section 28-1s-3w, and had a rig up for No. 3 Lusk, C SW SE SE, Section 33-1s-3w. Schermerhorn and others' No. 6-B Palmer, C SE SW SW, Section 32-2s-2w, was good for 120 bbls. from sand at 2,418-23 feet and the company has a rig up for No. 5 Palmer, C N half SW SW, Section 32. The Coline Oil Co. has a rig up for No. 6 Pierce, CNE NE SE, Section 12-2s-3w. The Twin State Oil Co. completed No. 4 Williams, C SW NE SW, Section 32-2s-3w, and it started at 150 bbls. a day from sand at 2,887-97 feet. The same company's No. 6 Jefferson, C NW NE SW, Section 25-2s-3w, was godo for 150 bbls. at 2,813-34 feet. The Magnolia Petroleum Co. has started drilling No. 1 Schwartz, SW cor. NE NE, Section 26-2s-3w.

Friedman and others are drilling below 500 feet in No. 1 Siler, SE cor. NE, Section 28-25-1w, Kay County.

In Tonkawa

The Blackwell Oil & Gas Co.'s No. 1-C Corrigan, SW cor. SE NE, Section 34-25-1w, was increased to 1,824 bbls. by deeper drilling, sand at 3,975-4,020 feet; No. 3 Corrigan, NW cor. SE NE, Section 34, oil sand at 4,005-34 feet, 1,025 bbls. naturally, drilling ahead; No. 4-C Corrigan, SE cor. NE, Section 34, top of the sand at 4,028 feet, flowing 50 bbls. an hour; Comar Oil Co.'s No. 5-W Endicott, NW cor. NE SE, Section 34-25-1w, drilling at 4,011 and spraying 209 bbls. a day; No. 7-W Endicott, SW cor. NE SE, Section 34,, oil at 4,044-4,112 feet, increased production to 3,403 bbls. a day; Wentz Oil Corp.'s No. 46 McKee, SE cor. NE SE SW, Section 34-25-1w, oil at 4,270 feet, drilled to 4,290 feet, 3,495 bbls. a day naturally; Phillips Petroleum Co.'s No. 4 Corrigan, NW cor. NE NE, Section 34-25-1w, total depth 4,090 feet, 2,500 feet of oil in the hole; T. B. Slick's No. 1-T Endicott, SW cor. Section 35-25-1w, oil from 2,420 to 2,520 feet, 35 bbls. on the pump after a shot; Healdton Oil & Gas Co.'s No. 2-C Rence, C W half NW NW, Section 11-24-1w, oil at 2,596-2,637 feet, shot with 20 quarts, swabbing 20 bbls.

In Payne County the Mulberry Oil Co.'s No. 2 no name, SE cor. SW SE, Section 23-18-4, was drilled to a total depth of 3,840 feet and plugged back. It tested only 6 bbls. a day on the pump from sand at 3,410-15 feet; R. C. Jones' No. 1 Parmele, C SE SE, Section 31-18-4 was abandoned as dry at 2,628 feet.

Miscellaneous Operations

In McIntosh County E. O. Sargeant has a rig on the ground for No. 2 McIntosh, CSW SW SW, Section 29-11-14.

In Pontotoc County the Day Oil & Gas Co. plugged its No. 1 Richardson, CE half NW NE, Section 9-5-3, which was some time ago reported as dry at 4,008 feet.

In Jefferson County, the Prairie Oil & Gas Co.'s No. 1 Seay, SW cor. NW SW, Section 34-6s-5w, made a 300-bbl. initial pumper from sand at 1,360-64 feet, sand not drilled through. The gravity of the oil is above 34 degrees. The Humble Oil & Refining Co. has a rig up for No. 1 Moore, CSE NE SE, Section 29.

Another failure has resulted out of the efforts to locate oil in Custer County.

(Continued on Page 111)

Kansas Oil Field News

By C. D. Lockwood

About the only item of importance concerning the Kansas Fields this week was a half-mile extension to the 3,000-foot horizon in the Winfield Pool, which was expected as a result of the Marlnd Oil Co.'s No. 1 Lierman, SE cor. SW, Section 13-32-4e, Cowley County. It was preparing to drill in Monday afternoon after pulling the big pipe. It topped the sand at 2,982 feet and was shut down 5 feet in the formation with 2,500 feet of oil in the hole. This well, if it lives up to expectations, will extend the pool half a mile and makes the prospects for a real field there loom up because it is higher than the original producers.

J. A. Hull is rigged up on No. 8-A Wallace C NW NW SE, Section 24-32-4 and has started drilling No. 5 Newman, NE cor. NE SW, Section 24-32-4; Sinclair Oil & Gas Co. has a rig up for No. 1 Spangler, SE cor. SE NW, Section 13-32-4. Marland & Neely have started drilling No. 1 Rockwell, SW cor. SW NE, Section 13-32-4. J. A. Hull was drilling ahead at 3,089 in No. 8 Wallace, NW cor. SE, Section 24-32-4. A break in the lime at 2,983-3,050 feet yielded a 50-bbl. daily production. Charles Dye and others were drilling below 950 feet in No. 1 County Farm, NE cor. SW, Section 34-32-4.

The Watchorn Oil & Gas Co.'s No. 1 Keithly, NW cor. NE NE, Section 36-32-4, was abandoned as dry at 3,750 feet. In the Eastman district, the Empire Gas & Fuel Co.'s No. 5 Eastman, NW cor. NE SE Section 6-31-6 was an 85-bbl. well at 2,844-82 feet. The Lewis Oil Co. was drilling at 1,560 feet in No. 3 Elliott, NE cor. SW SE, Section 31-30-6.

In Butler County the Potwin Oil & Gas Co. drilled to 2,093 feet and shut down in its test on the Maxwell farm, SW cor. NW SE, Section 31-24-4. The Imperial Drilling Co. was drilling below 400 feet in No. 1 Benson, SE cor. NE NE, Section 27-24-6. Wentz and others have a rig up for No. 1 Greisler, NE cor. SE, Section 22-27-6. Braden Brothers had a showing of oil and gas and are drilling below 2,410 feet in No. 1 Knox, NW cor. NE NW, Section 17-27-7. The Mid-Kansas Oil Co. completed a duster in No. 1 Slabaugh NW cor. SE SW, Section 10-28-6. It was abandoned at 2,779 feet.

In Cowley County Thomas B. Slick's No. 1 Carson, C SW SW NE, Section 19-32-3, is holding up at about 740 bbls. a day. It is producing from sand from 3,424-32 feet.

Waite Phillips Co. has a rig up for No. 2 Johnson, C NW NE SE, Section 9-33-3, in the Graham Pool, while drilling has commenced on the same company's No. 1 Thurlow, C SE SE SW, Section 17-33-3; No. 2 Backus, C NE SW NW, Section 30-33-3 and No. 1 Glascow, C SE SE SW, Section 20-33-3e, Rainbow Bend Pool.

New Work in Greenwood

In Greenwood County the Phillips Petroleum Co. is drilling below 400 feet in No. 1 Larsen, NE cor. NW, Section 20-22-5. Miller and others' have a rig up for No. 2 Lampe, SE cor. Section

(Continued on Page 111)

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North Louisiana-Arkansas

By M. L. Vaughn

Smackover district showing improvement with wildcat activity in prospect. H. L. Hunt and associates' well in Ouachita County extends Louann district half mile west of production. Largest well in third sand, making 500 bbls. from 2,314 feet. George J. Ames gets well estimated 100 to 150 bbls.

Shreveport, La., Nov. 24.—A slight decrease in production throughout the North Louisiana Field more than offset the increase of 180 bbls. a day n Arkansas production, leaving the average falling off in the combined fields of 1,286 bbls. a day. North Louisiana production averaged 58,705 bbls. daily, Cotton Valley falling off 492 bbls. a day, and a decline in other districts, bringing the total decline up to 1,466 bbls. daily. Arkansas' production averaged 117,490 bbls. a day, an increase of 180 bbls. daily, and the total production from the combined fields averaged 176,195 bbls., distributed as follows:

North Louisiana	
Bellevue	4,440
Caddo light	9,895
Caddo heavy	2,100
Cotton Valley	13,255
De Soto and Red River	4,780
Elm Grove	635
Haynesville	16,395
Homer	7,205
Total	58,705
South Arkansas	
El Dorado	11,355
Nevada County	1,305
Smackover light	32,690
Smackover heavy	69,915
Stephens	2,225
Total	117,490
Total both fields	176,195
Decrease	1,286

For the third time within two months, Smackover was visited by a disastrous fire on Friday, November 21, destroying a large portion of the business district, with a loss estimated between $75,000 and $100,000. Most of the buildings destroyed will be replaced with brick, as has been the case with the two previous fires, and when this is done, Smackover will have one solid block of fireproof brick buildings.

There has been a general improvement in conditions throughout the Smackover territory during the past week or 10 days and operators are looking for another boost in the price of oil in this territory following the recent advance in Gulf Coast, heralded here by an advance of 25 cents in Bellevue crude.

Permits are being issued at the rate of about three a day, compared with 12 or 15 during September and the outlook for wildcat drilling operations is brighter than for several months.

Louann Extended

The well completed by H. L. Hunt and associates on the Green lease in Section 23-15-17, Ouachita County, Arkansas, constitutes an important extension of the Louann district, half a mile west of previous production, and is also the largest producer yet completed in what has come to be known as the third sand in this district, although it is less than 100 feet lower than the regular producing sand in this territory. The well was completed at a depth of 2,314 feet and came in flowing by heads at the rate of 500 bbls. a day. Until recently all wells in this district were completed at an average depth of 2,200 feet, and none from the deeper sand has produced more than 100 bbls. a day, most being small pumpers of from 15 to 50 bbls. If the Hunt well holds up, it will be followed by extensive development.

Neevada County, Arkansas, is again coming to the front with development of importance. George J. Ames, president of the Home Refining Co. and one of the pioneers of this district, has again entered the Nevada Field and his first venture resulted in the completion of a well on the Womack lease in Section 10-14-21, estimated at between 100 and 150 bbls. The Dixie Oil Co.'s No. 2 Womack, same section, which came n several months ago as a gasser, has developed into an oil well and will make between 50 and 100 bbls. a day.

Union County Completions

Three completions were recorded in the Union County area of the Smackover Field during the past week, all small pumpers, with an aggregate initial production of 125 bbls.

The Gulf Refining Co. completed No. 22 on the Louis Werner lease in Section 5-16-16, pumping 50 bbls. at 2,253 feet.

The Pure Oil Co. completed No. 10 Craig, Section 15-16-16, pumping 45 bbls. at 2,020 feet, and No. 3 Wilson, Section 20-16-15, pumping 30 bbls. at 2,123 feet.

Ouachita County Completions

In Ouachita County, in the Smackover Field, there were four completions, all producers, with an aggregate initial production of 650 bbls.

The Arkansas Invincible Oil Co. completed No. 3 Myar estate in Section 30-15-16, pumping 10 bbls. at 2,277 feet.

The El Dorado Union Oil Co. completed No. 7 Hughes in Section 28-15-16, pumping 100 bbls. at 2,262 feet.

Hunt and others completed No. 2-C Green, Section 23-15-17, flowing 500 bbls. at 2,314 feet.

J. D. Reynolds completed No. 3 Brierton, Section 25-15-17, pumping 40 bbls. at 2,325 feet.

Cotton Valley District

There was only one completion in the Cotton Valley district during the week, the Fortuna Oil Co.'s No. 3 S. J. Merritt, Section 14-21-10, making a 50-bbl. pumper at 2,524 feet.

Bossier Parish

In the Elm Grove district, south of Shreveport, the Palmer Corp. completed Hodges B-5 in Section 25-16-12, making 27,000,000 feet of gas at 1,900 feet.

Caddo Parish

The Gulf Refining Co. junked the hole in its deep test, No. 216 Ferry Lake, Section 14-20-16, and the well was abandoned at 4,525 feet.

Claiborne Parish

The Gulf Refining Co. has abandoned its test on the Palmer lease in Section 35-23-6, at 3,340 feet. The well is located 10 miles northeast of Homer in undeveloped territory.

Morehouse Parish

The Oil Field Exploration Co. completed No. 1 Betz in Section 41-21-5, making 3,000,000 feet of gas at 2,356 feet.

Ouachita Parish

The Chester Carbon Co. completed No. 1 Wetzell, Section 36-19-4, making 3,000,000 feet of gas at 2,222 feet.

Ladel and others completed No. 30 fee, Section 10-19-5, making 15,000,000 feet of gas at 2,227 feet.

The Texas Co.'s No. 3 Ladel, Section 11-19-4, is making 20,000,000 feet of gas at 2,204 feet.

Nevada County, Arkansas

The Kenark Oil Co. has abandoned its test on the Honea lease in Section 12-13-21, testing dry at 1,957 feet.

Union County Drilling

A majority of the drilling operations in Union County are in the southern extension of the Louann district, or the Norphlet Pool with various attempts to extend both districts.

The Arkansas Fuel Oil Co. has set 10-inch casing at 160 feet in No. 5 LaGrone, Section 1-16-17; the Arkansas Invincible Oil Co. is drilling at 1,160 feet in No. 1 Patterson, Section 12-16-17 and Crawford & Sebastion are rigging up to drill No. 3 Giller in Section 14-16-15.

Estes and others are drilling at 1,450 feet in No. 4 Freeman, Section 1-16-17; the Gladys Belle Oil Co. has set 8-inch casing at 2,010 feet in Thompson A-1, Section 7-16-15, and the Higgins Oil & Refining Co. is arranging to test 6 feet of sand at 1,985 feet in No. A-4 Murphy, Section 14-16-15.

The Gulf Refining Co. has derrick up for five new wells: Nos. 24 and 26 L. Werner in Section 6-16-16, and No. 25 in Section 5-16-16, in the west end of the Louann district, No. 9 M. Alphin and No. 1 H. Murphy in Section 2-16-16, on the eastern edge of the Smackover Field. No. 1 H. Murphy is rigging up to drill.

The Imperial Oil Co. bailed the casing dry in No. 3 Smith, Section 29-17-14, and is ready to test at 2,187 feet; E. M. Jones is running core barrel at 2,545 feet in No. 1 Murphy, Section 26-16-16, and Kinnebrew aand others have set 10-inch casing at 210 feet in No. 4 Williams, Section 3-16-15.

Four miles southwest of Norphlet, the Liberty Oil Co. is rigging up to drill No. 1 Davis in Section 31-16-14, and 7 miles southwest of Norphlet and 4 miles northwest of El Dorado, Marr and others have gone back into an old test on the Dumas lease and found it standing with 1,500 of salt water and a show of oil in the hole at 2,142 feet. They are swabbing it dry and running sand pump.

Myerscough and others have set 10-inch casing at 100 feet in No. 3 Smith, Section 29-17-14; the Natural Gas & Petroleum Co. is drilling plug in 6-inch at 2,545 feet in No. 3 Frazier, Section 1-18-14, and Rogers and others are rigging up to drill No. 2 LeCory in Section 17-16-15.

P. F. O'Brien and others have set 12½-inch casing at 210 feet in an interesting test on fee land in Section 13-19-17, 7 miles west of the south end of the El Dorado Field.

The Penguin Oil Co. has derrick up for No. 3 Berry in Section 18-16-15, and the Phillips Petroleum Co. for No. 1 Hearin in Section 13-16-16.

Ray and others tested salt water at 2,207 feet in No. 1 Long, Section 28-16-14, and are waiting orders.

Rutledge and others have 1,400 feet of oil in the hole at 2,260 feet in No. 3 Hodges, Section 6-16-16, and are arranging to pump; the Simms Oil Co. has set 6⅝-inch casing at 2,270 feet in No. 1 Laney heirs, Section 8-16-16, and the Terry Summerfield Oil Co. has set 10-inch casing at 180 feet in No. 6 Smith, Section 29-17-14.

Sutherland and others are drilling plug in 6-inch at 1,850 feet in No. 3 Neely, Section 1-16-17, and have derrick up for No. 4 in the same section. The Texas Co. tested dry at 2,278 feet in No. 5 Alphin, Section 3-16-15, and is pulling liner to drill deeper, and is drilling in broken lime at 2,490 feet in No. 1 McAdoo, Section 15-16-16.

Wabler and others have set 6-inch casing at 2,200 feet in No. 1 Williams, Section 36-17-14; Weatherbee and others are drilling at 1,125 feet in No. 3 Rice, Section 6-16-16, and Nye Wilson is bailing to test 9 feet of sand at 1,967 feet in No. 3 Hays, Section 4-16-15.

Ouachita County, Arkansas

Bray-Hawthorne had a showing of oil and gas, with considerable salt water, at 2,208 feet in No. 1 Copenhagen, Section 13-15-17, drilled to 2,230 feet where it tested dry, now drilling at 2,235 feet.

H. E. Clark is drilling at 1,880 feet in No. 1 Yarbrough, Section 26-15-17, and set 6-inch casing at 2,253 feet in No. 1 Smith, same section.

Clark & Melat tested dry at 1,965 feet in No. 2 Murphy, Section 4-16-15, drilled 4 feet deeper and have 500 feet of oil standing in the hole in 29 feet of sand. Arrangements are being made to pump.

Forest City Box Co. set 10-inch casing at 40 feet in No. 1 fee, Section 31-15-16; Galloway and others, derrick up for No. 2 Hughes, Section 28-15-16; Hildreth and others drilling at 2,060 feet in No. 1 Mullin, Section 27-15-16, and Hurley and others set 6-inch at 2,258 feet in No. 4 Stringfellow, Section 28-15-16.

Hunt and others, who got a 500-bbl. well in Section 23-15-17, have set 10-inch casing at 40 feet in Anderson A-3, same section and derrick up for No. 1 Myatt, Section 22-15-17. Magnolia Petroleum Co. set 10-inch casing at 167 feet in No. 3 Brown, Section 26-15-17; 6-inch at 2,200 feet in No. 4 Nettie Patton, Section 32-15-16, and 6-inch at 2,200 feet in No. 3 W. F. Patton, Section 31-15-16.

J. H. Meek, trustee, had 300 feet of oil in hole in No. 2 Laney, Section 30-15-15, and bailing to test 25 feet of sand at 2,023 feet. Miller and others have 800 feet of oil in hole at 2,255 feet and building standard rig to pump No. 2 Hardin, Section 28-15-16. Morris Drilling Co. is arranging to test 8 feet of sand at 2,288 feet in No. 2 Mullins, Section 27-15-16.

Riggs and others set 10-inch casing at 43 feet in No. 1 Green, Section 23-15-17; H. A. Shmuller, derrick up for No. 1 Wells, Section 25-15-17, and Staves and others rigging up to drill No. 3 Jeffus and derrick up for No. 4, Section 26-15-16.

The Sun Oil Co. has 1,000 feet of fluid in hole in No. 1 Hardin, Section 27-15-16, 15 per cent fresh water and arringing to pump at 2,253 feet.

Sutton and others are going to make a deep test in No. 9 Hughes, Section 28-15-16, drilling at 2,400 feet.

The Texas Co. set 12½-inch casing at 60 feet in No. 1 Reynolds, Section 23-15-17, and Winner and others are drilling at 2,000 feet in No. 1 School House, Section 20-15-16.

Stephens Field

Morgan & Gaughan are drilling at 1,200 feet in No. 1 Morgan, Section 3-15-19.

Webster Parish

Recent extension of the Cotton Valley district eastward has encouraged development in this direction and two new wells were started during the week in Section 19-21-9. The Alabama Petroleum Co. is rigging up to drill No. 1 Ramsey and the Fortuna Oil Co. has derrick up for No. 1 Crichton in Section 19-21-9, and the Woodley Petroleum Co. is drilling at 850 feet in No. 1 A. J. Hodges, Section 18-21-9.

Alabama Petroleum Co. is drilling in lime at 2,360 feet in No. 3 Pardee, Section 24-21-10; Fortuna Oil Co. set 10-inch casing at 440 feet in No. 4 S. J. Merritt, Section 14-21-10; Humble Oil & Refining Co.'s Bodcau B-4, Section 24-21-10, drilling at 1,715 feet; B-5, Section 13-21-10, drilling at 75 feet; B-6, Section 28-21-10, rigging up to drill, and No. 2 Davis, Section 24-21-10, a location.

Louisiana Oil Refining Corp. is drilling in broken lime at 1,785 feet in No. 1 Nelson, Section 28-21-10, and at 200 feet in No. 2 Nelson, same section. Moffat & Murphy set 8-inch casing at 2,485 feet in No. 1 Coyle, Section 28-21-10, and Ohio Oil Co. set 10-inch at 450 feet in No. 9 Bodcau and at 455 feet in No. 10, Section 15-21-10.

Palmer Corp., whose No. 1 Miller, in Section 29-21-10, has been temporarily

(Continued on Page 114)

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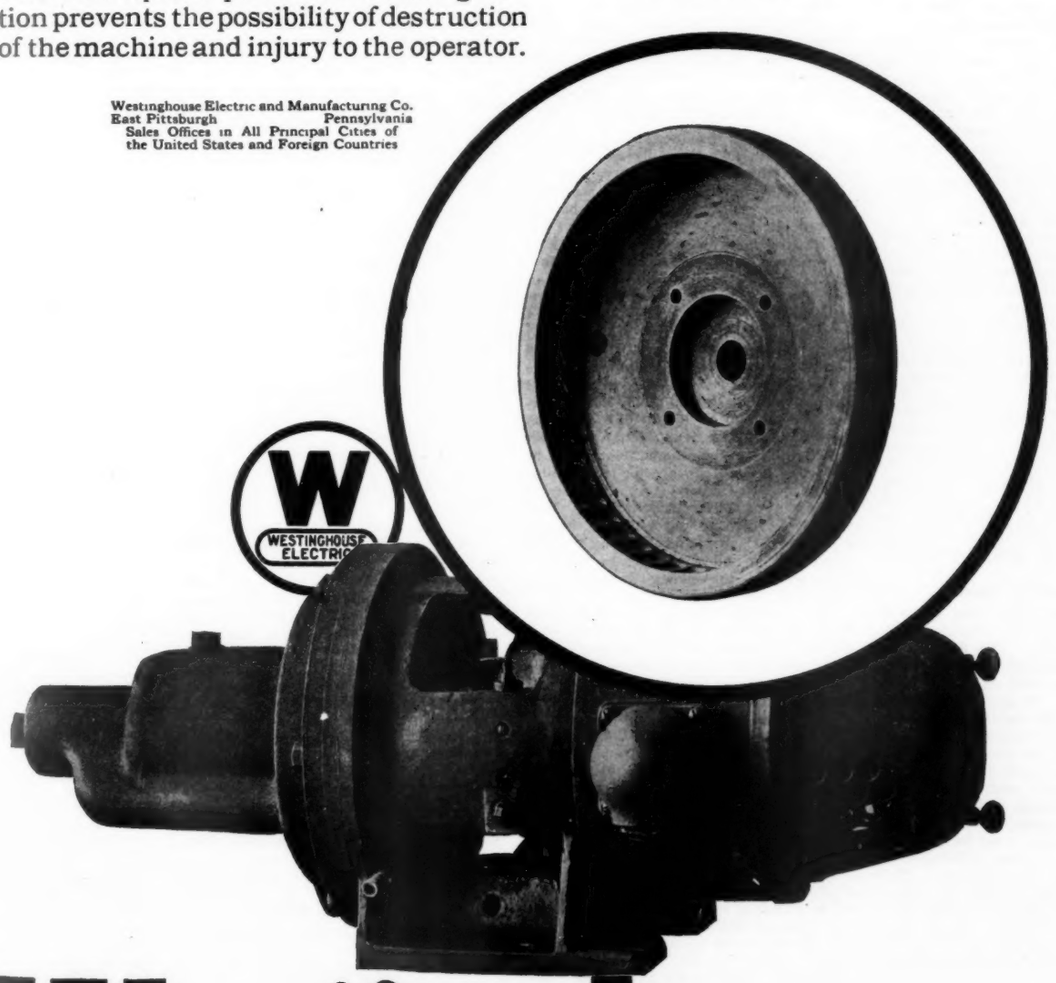

Westinghouse

Rocky Mountain Area

By F. B. Taylor

Salt Creek Field capable as it stands now of producing as much as peak record. Considerable area has not been drilled as yet and Lakota sand has great possibilities. Lack of demand for oil has held production down. Ohio Oil Co. gets well which starts at rate of 1,000 bbls. daily.

CASPER, Wyo., Nov. 24.—It appears that some wrong impressions have become prevalent due to the present condition of things in this region, and the Salt Creek Field in particular. The peak of production of the Salt Creek Field has been passed in the amount of oil produced from the second Wall Creek sand. This statement has appeared at different times in The Oil and Gas Journal. That does not mean that the Salt Creek Field is on its ultimate decline, however. The fact is that today the Salt Creek Field is capable of producing at its past peak as the field now stands and that it may even pass that high mark with the completion of wells now drilling or located. The matter of the present drop in production is more a matter of economical operation than a rapid decline of the wells themselves. To understand the issue clearly, requires considerable knowledge of the field itself and especially, a working knowledge of the geology and gas pressure factors that enter into the field's operation. Also the personnel of the companies doing the operating.

The Midwest Refining Co. controls the Salt Creek Field through a number of subsidiary companies with whom the Midwest made contracts for the operation of their leaseholds. For instance, the Salt Creeek Producers is made up of several smaller firms that hold valuable lands in the heart of the field, the Midwest has a contract with the Salt Creek Producers which enables the Midwest to operate these leases as one whole. In turn, the Midwest Refining Co. is controlled by the Standard Oil Co. of Indiana and Col. R. W. Stewart is the head of the Standard of Indiana.

Four Producing Sands

In the Salt Creek Field there are four sands that are known to produce oil in commercial quantities. The first is the Shannon, which produced oil in the early development of the field and was found at about 900 feet. Today the Shannon wells are standing idle for the other sands have engrossed the attention of the operating companies and as the Shannon production is small, this part of the field has been shut down until such time in the future when the demand and market permits its operation again.

The next producing sand in the first Wall Creek sand at about 1,500 feet in the central part of the structure. This sand has a productive area of about 4,500 acres located on the central part of the Salt Creek structure and the pool has been definitely outlined and its potential production known to within a reasonable amount.

The third producing sand is the second Wall Creek sand found at about 2,000 feet, average depth, and which is the great oil horizon of the field to date. Between the second Wall Creek and Dakota sand is a stray often called the third Wall Creek that produces irregularly but it is not classed as a regular sand in this column. Also the shales between the Wall Creek sands often contain oil in commercial quantities that make paying wells when hit and thus account for the term shale production met with in nearly every resume of field conditions in Salt Creek.

Below the second Wall Creek sand lies the Lakota sand at a depth in the central part of the field of about 2,400 feet. So far, this sand has only had a very few wells drilled to it and no comprehensive idea of its production area is to be had at this time. The more conservative petroleum engineers estimate this area the same as that of the first Wall Creek sand or about 4,500 acres in the central part of the field.

Other sands lie below these cited, but so far nothing has even been done towards exploring same. It is also likely that if these lower sands do contain oil, the crude will be black oil and its commercial value at present is questionable.

Production Costs High

Oil cannot be produced in the Rocky Mountain region as cheaply as it can in other oil regions of the country, the natural conditions tend to increase cost and the workers require higher wages than in other fields, because of these natural obstacles that must be overcome.

For the past two years, the oil production of Salt Creek has been a burden on both the producers and the refiners. For instance, the Salt Creek Producers and the Mountain Producers, two of the Midwest companies, have a combined production of about 55,000 bbls. daily, while the refinery pro rata for these two firms' oil amounts to about 40,000 bbls. daily, leaving from 10,000 to 15,000 bbls. daily as surplus. Were it not for the Midwest contract, these two companies would be compelled to build storage for this surplus crude or else dump it on a market already overloaded. Instead, the Midwest takes care of the crude in its big storage at Casper and thus allows the smaller firms under contract to the Midwest to gain the strong financial position they now have.

The available storage is pretty well filled at present due to the above conditions and from the present market indications, there is small chance of moving this crude in the immediate future. At the same time the producers in the field are not anxious to produce oil at cost, or in some cases at a loss and the minimum production is now coming from many of the wells as a consequence of the economical conditions although the wells could be brought to a much higher production figure with intensive methods. In many of the wells, the loss of the gas pressure has caused paraffin to clog the sand and this condition is considered as responsible for a large part of the falling off in the field runs. It has been shown in repeated instances that the wells in Salt Creek can be brought back to almost initial production by cleaning out and eliminating the paraffin. In fact the falling off of the field runs is considered a blessing in disguise by many operators for with the low gasoline market, the oil men are not anxious to push large stocks of crudet for a low price. The small operator however, is the one hurt most by this condition. However, he will be helped too in the long run when the oil market comes back to about $2 per barrel for Salt Creek crude and the storage is moved.

Big Area Not Drilled

One of the illuminating facts at present in regard to the Salt Creek Field is a study of an up-to-date map showing the wells drilled. It will be noted that the great area comprising the best part of the field and the central part of the Salt Creek structure is controlled by the Midwest companies, at the same time this area is the least drilled, about one well to 24 acres. Out on the edge where the Midwest lines join with other companies, the wells are thick. In comparison with maps of other oil fields, this presents a marked difference for in other regions the thick grouping of wells usually mark the points of highest productive capacity while in Salt Creek it is just the opposite.

Putting to one side the question of whether the operators at Salt Creek should endeavor to produce the capacity with a low market, the issue becomes at once the question whether a large corporation can handle a field to better advantage than many small concerns. This is answered in the procedure of the Midwest since that firm took charge under the direction of the Standard Oil Co. of Indiana. There can be no doubt but that the Government and the State of Wyoming have profited greatly through the management of these companies while the fact is evident that had the Salt Creek Field been apportioned among a lot of smaller concerns, the Government and State would have been heavy losers in the ultimate returns and probably at no time would there have been the income from the many small producers that has come through the management of the Midwest. This fact is proven by the operation of the Midwest on the famous State-owned Section 36-40-79.

The Shannon, first and second Wall Creek sands in the Salt Creek Field have evidently reached and passed their peak of highest production, but there still remains two factors that are known to carry oil and one of which has great potentialities. The Lakota sand was drilled to three years ago by the Midwest on Section 25-40-79 and to date this wesl has been producing steadily though considerable trouble was encountered due to water coming in. The second well to this sand was put down by the Midwest on Section 23-40-79 and started off around 6,000 bbls. daily. Other wells drilled by other operators on leases outside of the Midwest holdings have failed to find production in the Lakota although there have not been enough wells drilled to date to warrant a statement that the Lakota sand will not be productive on the edge of the field.

Lakota Holds Promise

The more conservative engineers who have made a study of the field place the area of the Lakota sand as about the same as the first Wall Creek sand and contained under the leases of the Mountain Producers and the Salt Creek Producers leases in the main. This would mean around 4,500 acres of Lakota productive area that is practically virgin and since the structure has never been tested in the Lakota sand at the high point, the quantity per well is still undecided. At present the Midwest has a well drilling on Section 35-40-79 that is considered located directly on the apex of the structure as to the Lakota sand and this well should therefore tap the Lakota sand at its highest point and also at the point of greatest production. Statements are freely made that this well is going to set a new record for the Salt Creek Field and will even surpass the great gusher in the second Wall Creek sand that started off at 20,000 bbls. daily several years ago when the field was new. This drilling well has about 200 feet to go to reach the Lakota, which is expected about 2,400 feet.

The Lakota sand well that came in last summer at 6,000 bbls. production is about 2 miles down the structure from the well now drilling and if the drilling well on Section 35-40-79 comes in even as large as the well on Section 23-40-79, it means that Salt Creek has a virgin field to be developed that may eclipse the records of the second Wall Creek sand development.

Colorado Work Disappointing

The summer's work in Colorado has been rather a disappointment. The number of new fields remains the same as last spring when the campaign started and much of the area that was considered good wildcat territory at that time has been condenmed. So far the Cretaceous has been tested mostly, but as this age shows failure to bring in fields, the operators are turning their attention to the underlying Pennsylvanian formation as possibly oil bearing. Next season is expected to see the Pennsylvania formation tested as the Cretaceous was in the past season. The Colorado operators are anxiously waiting to see what the Whittaker well will do. This is the oil producer drilled by the Union Oil Co. of California on the Fort Collins structure and which was only drilled to the top of the Dakota sand and shut down after it started to flow oil. The Union officials have stated that this well is to be drilled into the sand in the near future and the oil men expect to see a gusher when this is done. The well made a fine showing when the Dakota was reached. The Douglas Lake Dome between the Fort Collins and the Wellington Domes looks like a dry structure although some hopes are still held out that further drilling will discover production.

An interesting test now drilling in Colorado is that of the Marland Oil Co. on the Meeker structure, Section 20-1-93. This well is making a test of the Pennsylvania formation and is now about 1,425 feet deep. The sands that may hold production are expected above 2,000 feet and the well will produce black oil if production is found.

The Producers & Refiners has placed a new line across the Wind River at Riverton, Wyo., to carry the gas from the Sand Draw Field in Fremont Couny to Riverton, Hudson and Lander.

The Rocky Mountain Oil & Gas Association will hold its third annual meeting in Casper on December 2 and 3. Governor B. B. Brooks will preside and the meetings will be held at the Elks Club. The association will discuss questions relative to the oil business in this region.

Production Record

Runs from the fields of the Rocky Mountain region last week follow:

Salt Creek	83,530
Teapot	1,900
Big Muddy	3,050
Grass Creek	3,450
Elk Basin	975
Greybull	20
Rock River	2,000
Rex Lake	170
Notches	280
Lance Creek	1,600
Poison Spider	200
Osage	230
Hamilton Dome	280
Lander	100
Byron	90
Lliot Butte	5,690
Lost Soldier	50
Ferris	1,200
Craig	3,640
Cat Creek	3,600
Sunburst	915
Miscellaneous	
Total	83,895

Electricity Will Aid

As soon as the new electrical plant at Salt Creek is ready for operation, many of the strings of tools now drilling there will be set to cleaning out wells that are producing and the work of placing the Midwest wells pumping by electrical power will be rushed as fast as possible. The cold weather is a handicap on steam pumping but with the new electrical power, the wells can be operated without danger of freezing water or gas lines. This in itself will be a great saving of labor in the field.

(Continued on Page 111)

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Gulf Coast Oil Operations

By P. L. McGreal

Mecom Co.'s No. 6 Mecom, Hull Pool, flows 3,000 bbls. Republic Production-Humble Oil Co.'s No. 94 Dolbear, 850 bbls. Humble Oil & Refining Co.'s No. 8-B Chesson, Orange Pool, flows 1,200 bbls. Daily average gross production for field increases 1,420 bbls., largely due to Hull and Orange Pools.

HOUSTON, Tex., Nov. 24.—The Hull Pool in Liberty County, furnished the bulk of the new production in the Coastal area this week, with Orange in second place. Completions in the other pools were small ordinary wells. More rigs are starting in the Goose Creek, Orange and Hull districts, with the Gulf Production Co. leading in this respect.

The completions during the week number 23, of which 7 were worked over holes and the new output is 6,148 bbls. compared with 6,145 bbls. last week. Seven of the completions are listed as failures and two salt water wells. Seven wells were bailing at the close of this review.

The estimated daily average gross production for the week in the Gulf Coast pools is placed at 85,320 bbls. against an estimate of 85,425 bbls. last week. The estimate for the Southwest fields is placed at 42,460 bbls., a gain of 1,525 bbls., all of which is credited to the Luling Field and the well of Henne, Winch and Farriss in Jim Hogg County. It is averaging better than 1,200 bbls. per day. The estimated daily average for the two divisions combined is 127,780 bbls., an increase of 1,420 bbls. compared with the combined gross last week.

The estimate for each district is as follows:

District—	Gross Bbls.
Batson	1,640
Blue Ridge	850
Barber Hill	145
Big Creek	4,850
Dayton	90
Damon Mound	1,240
Edgerly (La.)	515
Goose Creek	10,900
Humble	5,125
Hull	16,970
Jennings (La.)	830
Markham	185
Orange	14,155
Pierce Junction	440
Spindletop	1,295
Saratoga	1,505
Sour Lake	4,210
Vinto (La.)	6,625
Welsh-Anse La Bute (La.)	90
West Columbia	12,800
*Miscellaneous	1,460
Total Gulf Coast	85,320

*Vacuum Oil Co.'s well near Lockport, La., credited with 1,200 bbls. Balance divided between Nacogdoches, Big Hill, High Island, Hockley.

Southwest Fields—	
Luling	33,200
Laredo districts in Webb County	4,370
Somerset	2,600
Callihan	535
Rockdale-Minerva	480
Jim Hogg County	1,275
Total	42,460
Grand total	127,780
Grand total last week	126,360
Difference (increase)	1,420

Hull Pool

The Mecom Oil Co.'s No. 6 Mecom on the northwest side of the Hull Dome is flowing 3,000 bbls. at 4,225 feet. On the north side, the Gulf Production Co.'s No. 13 Scarborough is bailing at 3,400 feet, after deepening. On the northeast, the same company's No. 2 Morris-Phillips is flowing 200 bbls. by heads at 1,620 feet, following a work over. On the east side, the Republic Production-Houston Oil Co.'s joint No. 94 Dolbear is flowing 850 bbls. at 2,475 feet.

The Gulf Production Co. is rigging to work over Nos. 8 Morris-Phillips and 43 Phoenix and is deepening No. 8 Phoenix at 2,450 feet. No. 14 Scarborough is drilling at 1,265 feet. The Republic-Houston Oil Co.'s joint No. 90 Dolbear is sidetracking at 675 feet and No. 93 the same at 1,380 feet. No. 95 is rigging and a location has been made for No. 96 on the Dolbear 800-acre tract. On the south side, the Humble Oil & Refining Co.'s No. 18 Guedry is at 455 feet. Same company's No. 1-B Hannah on the west side is drilling below 3,265 feet. The Texas and Vacuum Co.'s are rigging for joint No. 4 Hannah on the southwest side of the dome.

Orange Pool

In the Orange Pool, the Humble Oil & Refining Co.'s No. 8-B Chesson is flowing 1,200 bbls. at 3,455 feet. The Supreme Oil Co.'s No. 3 Jackson is flowing 500 bbls. of fluid, 80 per cent oil, at 3,450 feet. It is a deepened hole. The Rycade Petroleum Corp. is bailing No. 5-A State land in Cow Bayou at 3,410 feet. The Mutual Oil Co. is setting perforated pipe in No. 7 Chesson at 4,225 feet. It came in two weeks ago making at the rate of 3,500 bbls., but sanded. It was cleared last week and resumed flowing 2,000 bbls., but again sanded. In the southeast extension, the Sun Oil Co.'s No. 4 Brown is bailing at 4,450 feet and the Brownie Babbittee Oil Co. abandoned No. 3 Brown at 4,110 feet. The American National Oil Co.'s No. 1 Winifree, 1 mile north and east of production, is swabbing salt water at 4,675 feet.

In Cow Bayou, the Rycade Petroleum Co.'s No. 1-E State land is drilling around 5,100 feet. No. 8 is below 4,810 feet and No. 14 below 5,275 feet. Nos. 1 and 14 are the deepest holes drilling in the pool, noted for its very deep wells. The Gulf Production Co. has two drilling also below the average depths. No. 2 Hammam-Consolidated at around 4,955 feet and No. 8-A Kishi-Lang is below 4,980 feet. The Gulf Co.'s No. 2 Chesson is deepening below 4,570 feet and No. 8 Peveto is at 3,135 feet. B-3 Chesson is at 4,265 feet. Nos. 4-A Chesson, 10 Hager-Moore and 17 Hager fee are rigging up to drill. The Brownie Babbittee Oil Co.'s No. 4 Brown is sidetracking at 1,265 feet. No. 1 McLean is working over. The Orange Petroleum Co.'s No. 8 Chesson is drilling at 4,765 feet. The Sun Co.'s No. 2 Belleisle is at 3,715 feet. The Edgerly Petroleum Co.'s No. 3 Carbello is working over. The success of the Mutual Oil Co. in finding a deep sand on the Chesson on the north side of the pool in Nos. 3 and 7 at 4,757 feet and 4,225 feet respectively, has resulted in a number of old wells in that section being drilled deeper. The Humble Oil & Refining Co. is deepening No. 9 Chesson and rigging for No. 21. No. 14-A is also drilling deeper, as is No. 1 Winifree. The Mutual Oil Co. is rigging to deepen Nos. 6 and 9 Chesson. The Gulf Co.'s No. 1 Granger is below 4,700 feet.

Goose Creek Pool

In the Goose Creek Pool, the Gulf Production Co.'s No. 24 Smith is a 50-bbl. pumper at 1,600 feet. F. B. West's No. 5 Wright is a pumper at 1,592 feet, offsetting the Southern Exploration Co.'s No. 8 Wright. The Humble Oil & Refining Co.'s No. 47 Smith is bailing at 4,175 feet and its No. 1 Tabb was abandoned at 2,075 feet, after trying to work it over.

Northwest of production, the Higspen Oil Co.'s No. 2 Busch is drilling at 3,685 feet. In the bay waters, the Gulf Production Co.'s No. 4 Hirsch is at 4,460 feet. Nos. 17 State land and 8 Producers are rigging. No. 8 Chapman-Bryan at the mouth of the creek is drilling around 3,915 feet. On the mainland, No. 21-A Wright is drilling below 4,835 feet and No. 6 Wright at 1,389 feet, with No. 8-A Tabb sidetracking at 1,400 feet and No. 15 Smith deepening at 2,670 feet. The Sun Oil Co. is setting screen in No. 2 Bartlett-Smith to test at 2,555 feet. The Copeland Oil Co.'s No. 5 Bryan is deepening at 3,213 feet. The Southern Exploration Co.'s No. 2 Wright is working over. The Gulf Coast-United Central Oil Co.'s No. 40 Galliard is drilling at 1,890 feet. On the east side, the Humble Oil & Refining Co. set and cemented casing in No. 59 Smith at 4,120 feet and is drilling No. 60 Smith at 2,545 feet. It has reset the liner in No. 5 Jones in the bay at 2,760 feet.

Hardin County Pools

In the Batson district, W. B. Flynn's No. 2 Donohoe is bailing salt water at 2,325 feet. S. R. Buchanan has a pumper in No. 80 Milhome at 1,065 feet. The Ada Belle Oil Co.'s No. 81 Wise is a dry gas well at 1,150 feet. Anderson and Munson's No. 1 Hodges there is below 3,170 feet, the deepest hole drilling in the pool. The Acorn Oil Co.'s No. 48 Paraffine is rigging to drill, as is S. R. Buchanan's No. 81 Milhome. Cavitt and others' No. 2 King is ready to start. The East Batson Oil Co.'s No. 1 Texas is drilling at 748 feet.

In the Saratoga Pool, the Weldon Oil Co.'s No. 2 Texas is pumping 100 bbls. at 1,505 feet. Paggi Brothers Oil Co. worked over No. 2 J. Hooks into a 10-bbl. well at 1,200 feet. The Skinner Oil Co.'s No. 1 Booker is bailing at 1,000 feet and the Rio Bravo Oil Co.'s No. 212-B is doing the same at 1,025 feet. The Sun Oil Co.'s No. 58 T. C. is drilling below 745 feet.

In the Sour Lake Pool, The Texas Co.'s No. 237 Fee is a worked over pumper at 2,075 feet. The Sun Oil Co.'s No. 60 Bass & Eastham is pumping 15 bbls. at 1,025 feet. The Lake View Oil Co.'s No. 40 Hardin was abandoned at 2,275 feet.

The Humble Oil & Refining Co.'s No. 38 Hardin-West there is drilling below 2,600 feet. Hankamer Oil Co.'s No. 2 Brown is around 1,345 feet. J. S. Jackson's No. 3 Trustee is sidetracking at 726 feet. T. G. Barkley's No. 3 Rogers is starting to drill.

The Rycade Petroleum Corp. abandoned its second deep test off Spindletop Dome at 3,920 feet. It was No. 1 Gladys. The first deep hole was on the McFadden acreage. In the old pool W. T. Wherry abandoned No. 1 Trembly at 950 feet.

The Gulf Production Co.'s No. 209 Gladys is drilling at 865 feet and Wilson & Broach's No. 12 Fort Worth at 665 feet.

The Rycade Corp. has three fairly deep tests drilling in the Markham Pool in Matagorda County. No. 3 Hudson is reported in rock salt at 3,610 feet and No. 1 Sisk in gyp at 3,665 feet. No. 1 Gray is deepening at 3,860 feet in hard sand rock.

Humble Pool

In the Humble Pool, Dr. P. S. Griffith is drilling No. 1 Burt 100 acres and Czereaux & Martin No. 1 Burt 50 acres. These are in the Stevenson deep sand section. The Texas Co. also has a rig drilling on the Stevenson-Marsailes Brothers' No. 2 Cherry in the old part of the pool, is drilling. Several old holes are being worked over in that district.

In the West Columbia Pool, the Humble Oil & Refining Co. is fishing in No. 6 Coon at 2,550 feet and has made a location for No. 12 P. & L. lease. The Texas Co.'s No. 66 Hogg is working over below 3,100 feet.

At Pierce Junction, the Gulf Production Co.'s No. 10 Taylor is going on the beam at 3,975 feet, after drilling deeper. The company is rigging to deepen No. 9 Taylor. H. R. Cullen's No. 5 Howe is drilling at 3,100 feet. These are on the east side of the dome.

At Blue Ridge, the Gulf Production Co. has started No. 7 Luscher on the east side of the dome and is drilling No. 1 Invincible on the southwest side, below 4,200 feet.

In the Big Creek Pool, The Texas Co.'s No. 1 Fee is drilling at 1,925 feet. The Gulf Production-Snowden & McSweeney's joint No. 17 Davis is starting. No. 16 Davis blew out around 2,400 feet. No. 8 Wheat joint is drilling at 2,225 feet. The Oil Production Co.'s No. 1 Ahlers is at 1,655 feet. Rich & Co.'s No. 2 Moore-Hager is rigging.

South Louisiana

In the Edgerly Pool, the Green Oil Co.'s No. 6 Moore is bailing at 2,945 feet and in the Jennings Pool, Green & Sutton's No. 1 S. F. S. is pumping 150 bbls. at 1,630 feet.

The Port City Oil Co. is starting No. 1 Heywood in Calcasieu Parish and the Ville Platte Oil Co. No. 1 Tate in Evangeline Parish.

Coastal Wildcats

In Angelina County, Ferdinand Henne's No. 1 Ellison is an 8-bbl. well at 540 feet in the Jennings shallow sand district. Peavy and others' No. 1 Peavy abandoned. The Dome Development Co. abandoned No. 1 Schneider in Harris County at 850 feet.

In Fort Bend County, the Rycade Petroleum Corp.'s No. 1 Nash, off the Wisdom Dome, is drilling below 2,300 feet and No. 2 Nash has started drilling. The Gulf Production Co. abandoned No. 1 Moore, near Orchard, in gyp and has a location for No. 2 Moore, another formation test. The Neilan Oil & Refining Co.'s No. 1, west of Rosenburg, is around 400 feet. Paul Schulte is starting No. 1 Handy, a formation test, south of Richmond. The Gulf Development Co.'s No. 3 Erie townsite is around 4,200 feet.

In Brazoria County, the Stratton Ridge Oil Co.'s No. 14 Dannebaum is at 650 feet. The Texas Co. has a location near Clute. J. C. Irvine's No. 1 Russell is a derrick. The Bryan Production Co.'s No. 1 McNeel at Freeport is sidetracking below 2,940 feet.

In Liberty County, The Texas Co. is rigging No. 2 Ott, 7 miles west of the Batson Pool.

In Harris County, the Trinity Copper Co.'s (Mitchell & Purdy) No. 1, near Westfield, is drilling around 3,200 feet. Walker and others' No. 1 Hunt, between Goose Creek and Barber Hill, is shut down. The Bay Shore Oil Co. is rigging No. 2, near La Porte, across the bay from the Goose Creek Pool.

In Montgomery County, the National Refining Co. of Indiana, has a location for No. 1 McMasters. In Jackson County, the Vanderbilt Petroleum Co.'s No. 1 Seliner is shut down at 2,720 feet, waiting on fuel oil. The Gulf Co.'s No. 1 McCloud off Boling Dome in Wharton County is below 800 feet.

THREE WYOMING ACCIDENTS

David Brown, a resident of Casper and an employe of the Standard Oil Co. of Indiana at the local refinery, died from injuries received when he fell from a scaffolding at the refinery.

Avery Hotelling and George J. McDonald were asphyxiated in the Poison Spider Field while they were trying to put a new orifice in a meter. The men were employes of the New York Oil Co. and the Fargo Western Oil Co.

Superintendent John Cullen of the Laramie refinery of the Standard Oil Co. of Indiana, was seriously hurt in an automobile accident between Laramie and Cheyenne.

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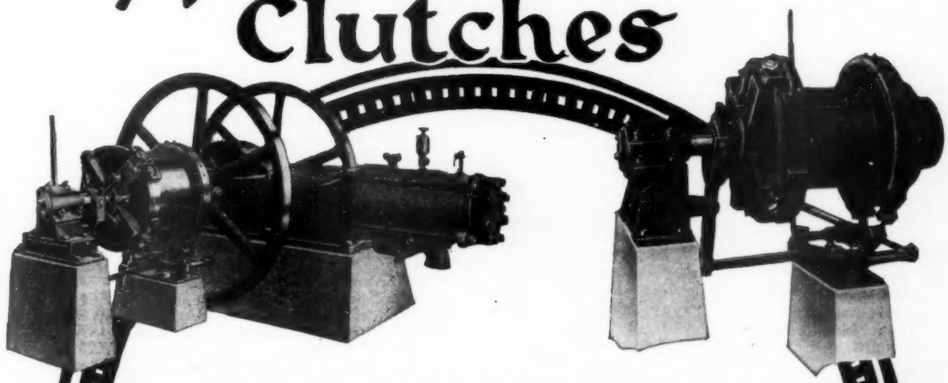

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Fields of the Central West

By Whit

Aetna Drilling Co. well, Payne County, flows natural over crown pulley; another 25 bbls. Defenbaugh and others' wildcat in Mercer County finds gas pay. Fowler Brothers Petroleum Co. has 30-bbl. well in Auglaize, and Young & Geselchen 40 bbls. flush. Boyd Eaton and others, 35 bbls.

FINDLAY, Ohio, Nov. 24.—No great activity in completed work was noticeable in the fields of Illinois, Indiana, northwestern and central Ohio during the week; but 37 new wells were reported, none out of the ordinary size. Operators are awaiting an advance, feeling the time is now short. This has brought about much drilling in some of the older fields, as work could be done at a much less price since many strings of tools were idle, and the price of drilling went down. In the old fields these new wells just about produce enough to make up for the loss in production from the decline of the old wells and the well owner likes to have a few extra wells on power when prices soar.

With a good market the early spring should see much drilling in all fields east of the Mississippi, as the past year has shown some nice extensions to the older producing areas.

Lima Field

Only 14 wells were reported from the old Lima fields of northwestern Ohio during the week, four of which were dry holes, two gas wells and eight oil wells with a reported flush of close to 200 bbls. According to reports from the Trenton Rock area, the Aetna Drilling Co.'s No. 3 on the Thomas Lamb farm, Section 34, Harrison Township, Paulding County, a short distance out of Payne, has all the ear marks of the best completion of any of the late wells in the new extension to the Payne Field to the northeast. John D. Lamb, an oldtime native of Payne, wires that the well struck top of Trenton at 1,409 feet and oil at 22 feet, to a total depth of 1,431 feet, where it flowed natural over the crown pulley, and capped and flowing into tanks, and that No. 2 well on the same farm, is making around 25 bbls. If wells of this caliber can be found in that section of Paulding County there is no doubt a considerable amount of work will be done by the numerous operators that hold leases in the field. This is the eighth well reported from Paulding County in November, which makes it stand out for number of new completions.

Far to the south of the old Trenton Rock fields proper two completions were announced for the week, one being a gas well and the other a duster, both being in Shelby County. In Franklin Township, of this county, the Osage Oil Co. drilled a well and found a good showing of natural gas in the shale, 600 feet from the north line and 300 feet from the east line of the E. H. Maurer farm, in the southwest quarter of Section 14. The other well was drilled by McClure & Marshall, a test 900 feet from the north line and 250 feet from the west line of the C. Hoover farm, in the northwest quarter of Section 19, Turtle Creek Township. This proved a duster.

In Liberty Township, Mercer County, L. E. Matz and others' second test on the southwest corner of the Phil Strable farm, in the northwest quarter of Section 4, struck a heavy body of salt water in the Trenton and was abandoned as worthless. One of the most interesting strikes made in this country for many months was when Defenbaugh and others' found a gas pay in the lime at a depth of 574 feet in a wildcat well in the southwest corner of the E. Snyder farm, in the southwest quarter of Section 16, Butler Township. This well is reported at 4,000,000 feet, and the lime is supposed to be the Niagara as nearly as those interested could guess it, as it is the nearest to the surface of any known gas in the Lima Field. In the same township, O. J. McGuigan and others found a dry hole in a test on the southwest corner of the H. Puromell farm, Section 23. Top of Trenton was found at 1,087 feet and drilled 63 feet in to a total depth of 1,150 feet.

The new pool located a few miles west from Wapakonetta and a short distance southeast from Glynwood, in Moulton Township, Auglaize County, is furnishing some of the best late completions in the Trenton area. In this township, the Fowler Brothers Petroleum Co.'s No. 2 located 700 feet from the south line and 150 feet from the east line of the G. R. Julian farm, in the southwest quarter of Section 34, showed 30 bbls. flush. Young & Geselchen's No. 3 in the southeast corner of the W. E. Cook farm, in the northwest quarter of the same section, showed a flush of 40 bbls., while Cliff Blair and others' No. 1 in the southwest corner of the John Tester farm, in the northwest quarter of Section 34, showed 15 bbls. A large amount of leasing has been done in this new extension to the south of the old field at Glynwood and north of Wapakonetta. This is a big strip of territory overlooked in the early 90's when the great St. Marys and nearby oil pools were in their greatest rush.

In Eagle Township, Hancock County, Star & Clark's No. 9, located 1,200 feet from the north line and 200 feet from the west line of the N. Powell farm, Section 5, produced 15 bbls. flush. It is located between Findlay and Lima, not far from the Dixie Highway.

In Troy Township, Wood County, and between Woodville and Toledo, the Modern Oil Co.'s test near the northeast corner of the Anna Hartman farm, in the southeast quarter of Section 26, surprised the owners as well as the natives, with coming in with a 20-bbl. production of 1,295 feet. This is another area that was overlooked in days gone by. In Lake Township, same county, and adjoining Troy Township, John Patton and others drilled a duster in a test 200 feet from the south line and 800 feet from the east line of the Gideon Laplant farm, in the southeast quarter of Section 25. The well was drilled to a total depth of 1,330 feet. In the same township, Keiser, Brown and others' No. 8 located 600 feet from the south and east lines of the Ed Young farm, in the northeast quarter of Section 36, produced 5 bbls. from a total depth of 1,326 feet. In Plain Township, same county, Bert Ladd drilled in his second test, 2,210 feet from the south line and 225 feet from the west line of the Joe Lane farm, mapped as the Mose Lane farm, in Section 33, showed a production of 20 bbls. from a total depth of 1,364 feet.

Central Ohio

Eighteen completions were reported from the Central Ohio Field during the week, of which two were oil with a flush of 17 bbls., one was dry and 15 were gas wells. During the week 10 new locations were staked out and 31 new wells started drilling, an unusually large amount of new work at this season, but due in the main to the hunt for natural gas by the large gas concerns.

In Burlington Township, Licking County, the E. H. Everett Gas Co.'s test on the John Patton farm, in Lot 4, struck a well showing for about 25,000 feet of gas in the Clinton sand, and was drilled through that formation, the Trenton Rock being picked up at a depth of 3,500 feet, drilled 29 feet into the Trenton sand and cased. The well is still drilling, with hopes of getting a pay deep in this well known formation.

In Mohican Township, Ashland County, W. L. Roher's test on the Sarah McFadden farm, Section 4, picked some gas with a slight showing of oil in a shallow sand, supposed to be the Berea. In the same township, M. Snyder and others met with the same results in No. 3 on the J. McFadden 20 acres, same section, both being light gas wells.

Three fairly nice gas wells were reported completed by the Logan Gas Co. in Orange Township, Ashland County. They are No. 1 J. P. Calhoun farm, Section 7; No. 1 John J. Brown farm, Section 6, and No. 1 on the Dora Richards farm, Section 5. This company is drilling Nos. 8 and 9 on the William Monteith 150 acres, Section 7, and made locations for No. 1 on the John J. Brown 80 acres, Section 7, also staked out for a second well, same farm.

In Greene Township, Ashland County, the Logan Gas Co. drilled a rather light gas well in a test on the Clara McMillan farm, Section 29, and drilling a test on the Hilda Kline 40 acres, Section 28. Same company made a location for a test on the P. C. Cowan 320 acres, Section 27, and for No. 2 on the Martha Brown 120 acres, Section 28.

In Litchfield Township, Medina County, Hulse & Koontz drilled a dry hole in No. 5 on the Frank Cinco farm, Lot 49. In Harrisville Township, same county, the East Ohio Gas Co. made a location for a test on the Malissa Steel 44 acres, in Lot 90. In Brunswick Township, the Ohio Fuel Gas Co. is drilling a test on the Gabriel Kovach & Co.'s 70 acres in Lot 34.

In Grafton Township, Lorain County, the Ohio Fuel Gas Co. started the drill at No. 1 on the George Mole 122 acres, Lot 13. In Columbia Township, same company is drilling No. 1 on the Carl and Emanuel Herold 160 acres, Lot 29. The Logan Gas Co. is drilling No. 1 on the Jeremiah Martin 16 acres, Lot 31 and No. 1 on the S. A. Ives 50 acres, Lot 74.

In Milton Township, Wayne County, the East Ohio Gas Co. started the drill at a test on the C. Ziegler 112 acres, Section 22. In Cannan Township, Burton-Morgan Stephens Interests are drilling a test on the J. Bowers 12 acres, Section 22. Central Ohio Gas Co. is drilling No. 1 W. Shoemaker, Section 24. Logan Gas Co. is drilling No. 1 A. B. Fouch 20 acres, Section 24. Globe Oil & Gas Co. drilled a light gas well at a test on the Gail Betz 10 acres, Section 16. East Ohio Gas Co. is drilling No. 1 on the C. Sells 82 acres, Section 24, and Daugherty Brothers are drilling No. 1 Yoder 14 acres, Section 24.

In Benton Township, Hocking County, the Logan Gas Co. started drilling at No. 1 on the Thomas W. Burns farm, Section 28.

In Monroe Township, Holmes County, the Central Ohio Gas Co.'s No. 2 Oscar Kerns farm, Section 3, is estimated as a 10-bbl. well from the Clinton sand. This company has started drilling No. 1 on the J. B. Finney farm, Section 5. Klise-Eckstein-McCann Co. is drilling No. 1 on the Saunders Martin 143 acres, Section 14. Burton-Morgan Stephens Interests are drilling No. 3 on the Albert Mackey 50 acres, Section 5. East Ohio Gas Co. made a location for a second test on the Albert Mackey 98 acres, Section 6. The Central Ohio Gas Co. is drilling No. 2 on the U. S. Davenport 140 acres, Section 5. The East Ohio Gas Co. satrted the drill at No. 3 on the C. M. Shanks 149 acres, Section 10. In Prairie Township, same county, this company made a location for a test on the Homer A. Bell 65 acres, Section 17. In Kilbuck Township, the Carter Oil Co. is starting a test on the J. S. Jackson 162 acres, Section 2.

In Hardy Township, Holmes County, the Logan Gas Co. drilled a fair gas well at a test on the Scott V. Mast farm, Section 9. Central Ohio Gas Co. made a location for a test on the S. S. Troyer 100 acres, Section 33. The East Ohio Gas Co. has started the drill at No. 1 H. C. Sterling farm, Section 36; No. 2 on the same farm, and No. 1 on the Harvey and Helen Bell 100 acres, Section 29.

In Coal Township, Jackson County, the Ohio Fuel Supply Co. got a nice gas well at a test on the G. W. Roach farm, Section 36. The Ohio Fuel Gas Co. started the drill at No. 2 on the L. V. Reed 185 acres, Section 34.

In Carthage Township, Athens County, McBride and others' drilled a light gas well in a test on the Jacob Varner farm, Section 2, finding the gas at a depth of 1,140 feet. H. M. Waldron and others found a light gas well in a test on the Kate Evans 37 acres, Section 3, in the Maxon sand at 1,029 feet. Ohio Fuel Gas Co. is drilling No. 1 on the Union Trust Co.'s 90 acres, in Section 4. The Jay Oil & Gas Co. is drilling No. 2 on the Bailey & Tedrow 163 acres, Section 6, and the Shady River Oil & Gas Co. is drilling No. 11 on the F. W. Chapman 175 acres, Section 19.

In Rome Township, Athens County, the Pittsburgh Gas Co. found a fair gas well in No. 2 on the Thomas McGraw farm, Section 23. Harry W. Leeper and others plugged back their No. 2 J. C. Prent farm, Section 23, that was dry in the Maxon sand at 974 feet to a depth of 875 feet and have a light gas well. Rice Oil & Gas Co. got a light gas well at No. 4 on the W. B. Rice farm, Section 23, and drilling No. 5. Stewart Oil & Gas Co. is drilling No. 5 on the E. Cunningham 164 acres, Section 23. Stevens and others are drilling No. 4 on the G. S. Parker 250 acres, Section 35, and Dunham Brothers are drilling No. 1 on the E. Bryon 57 acres, Section 32. In Waterloo Township, same county, the Logan Gas Co.'s No. 2 on the S. J. Lowery farm, Section 1, is a nice gas well in the Berea sand at 1,052 feet. Ohio Fuel Supply Co. made a location for a test on the C. H. Ford farm, Section 36, Troy Township, same county.

Reports from Burlow Township, Washington County, say the Pittsburgh Gas Co. drilled in a fairly good gas well in No. 1 on the P. H. Smith farm, in the Maxon sand at 1,267 feet. In Lot 1,027 same township, the same company has started drilling a test on the H. H. Wood 80 acres, and drilling No. 1 on the Mollie Lasure 61 acres, in fractional Lot 1,029, same township. In Fairfield Township, also in Washington County, Ross Brothers' No. 3 Henry C. Wagoner farm, Section 4, is estimated at 750,000 feet from the Maxon sand at 1,233 feet. Bachelor Brothers are drilling close to the sand at No. 1 Winifried Croy farm, in Fractional Section 679, Fairfield Township, Washington County.

Indiana

Only one completion was reported from the Indiana Field, and that was in the Princeton Field in the southwestern portion of the State, being J. E. Sullivan's test located 625 feet from the north line and 250 feet from the west line of the C. Bowermeister farm, in the north-

(Continued on Page 80)

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Pennsylvania-West Virginia

By D. S. Wakenight

Gassers outnumber oil producers and dry holes. Stephens Oil Co. has Tyler County, West Virginia, well, producing two kinds of oil. New work in Calhoun County. Carter Oil Co. gets 25-bbl. producer in Holmes County, Ohio. Activity in North Strabane Township, Washington County, Pennsylvania.

PITTSBURGH, Pa., Nov. 24.—Since the eastern fields were last reviewed, development work has been lagging. The average size of the producing wells was very small. In the list of completions were several good gas wells, the best being the Hope Natural Gas Co.'s test on the Albert Vanhorn farm, in Center district, Gilmer County, West Virginia. The gas pressure was developed in the Maxon sand and is estimated at 11,000,000 feet a day. In volume this is the largest gas well completed in the eastern fields in a great many months. In the same district, Hayes & Roberts got a 3,000,000-foot gasser in the same formation at a test on the E. F. Raybuck farm. The gas ignited from the boiler and only by prompt action on the part of the drilling crew was the fire extinguished. The Hope Construction & Refining Co. met with a surprise when it drilled its second test on the M. F. Smith farm, in West Union district, Doddridge County, into the Big Injun sand. The first test on this farm came in a fair oil producer and wells of the same kind had been completed on adjoining farms. This well, however, came in a gasser, estimated at 2,225,000 feet.

More Gassers Than Oil Wells

All through the week of development work, gassers outnumbered the oil producers and dry holes combined. On Wigners run, Murphy district, Ritchie County, the Hope Natural Gas Co. completed a gasser on the M. A. Scott farm. On Indian Creek, in the same district, the same company's test on the D. W. Campbell farm is a gasser in the Big Injun sand. On Hughes River the same company's test on the Lemuel Wilson farm is a duster in the Berea grit. In Grant district, the same company has an 8-bbl. pumper in the Big Injun sand at a test on the Elizabeth Cain farm. In Grant district, Harrison County, the Northwestern Oil & Gas Co. completed through the fifth sand its test on the Isadore Stout farm a good gasser.

Shooting Helps

On Buffalo run, Grant district, Wetzel County, the Kanawha Oil Co. shot and cleaned out its old No. 9 on the Samuel Lantz farm, increasing its production from less than 2 bbls. to 9 bbls. a day. Eight miles east of Clarksburg, Elk district, Harrison County, the Grasselli Chemical Co. started to drill a wildcat on the C. B. Blair farm. On Broad run, McClelland district, Doddridge County, the Carter Oil Co. completed and shot in the Big Injun sand a test on the Rebecca Williams farm, good for 4 bbls. a day. At the mouth of Broad run, same district, the Carter Oil Co. completed in the same formation a test on the Ash heirs' farm, showing for 8 or 10 bbls. a day. On Big Buffalo run, Union district, Tyler County, Morgan Brothers & Co. drilled a second test on the Grant Thorne farm into the top of the Keener sand. It is a gasser good for 2,000,000 feet.

Two Kinds of Oil From Well

In Meade district, Tyler County, the Stephens Oil Co.'s second test on the Roscoe McCullough farm through the Big Injun sand developed two kinds of oil—one light and the other dark—in this formation. The light oil, estimated at 2 bbls. a day, was developed in the upper part of the sand and 3 bbls. of dark oil in the lower part of the sand. On Stewart run, Union district, the Neeley Oil Co. has the rig completed for a test on the J. B. Stewart farm and the South Penn Oil Co. has a rig up on the L. H. Hoss farm, on Big Buffalo Creek. At Pleasant Hill, Walker district, Wood County, Rexroad & Rogers have a duster in the Big Injun sand at No. 6 on the William Vincent farm. On Yellow Creek, Sheridan district, Calhoun County, the Chemical Oil & Gas Co. completed and shot in the Berea grit a test on the A. O. Jackson farm, showing for a very light pumper. In the same district, Godfrey L. Cabot's second test on the D. S. Wells farm is a gasser in the Big Injun sand. In the Smithfield district, Roane County, the United Fuel Gas Co.'s tests on the C. E. Monroe and J. P. Young farms are both gassers in the Big Injun sand.

Gilmer County

In DeKalb district, Gilmer County, the Hope Natural Gas Co.'s test on the W. F. Roberts farm is a gasser in the Big Injun sand. In the same district, the Philadelphia Oil Co. has a duster in all sands at a test on the M. E. Law farm. It has been abandoned. In Otter district, Braxton County, the West Virginia Central Gas Co. has a gasser in the Big Injun sand at No. 3 on the A. P. Friend farm. In Carroll district, Lincoln County, Wolf & Black completed a Big Injun sand gasser on the R. L. Black farm. In the same district, L. R. Sweetland got a gasser in the same formation at a test on his own farm. On Mud River, the Columbia Gas & Electric Co. has started to drill a test on the M. J. Callihan farm. On Fudge Creek, Grant district, Cabell County, the Aetna Oil & Gas Co. is drilling a test on the W. B. Witherholt farm. On the same stream, 1 mile north, Walter Swan and others have the rig completed and started to drill on the John Birch farm.

At the mouth of Broad run, McClelland district, Doddridge County, the Carter Oil Co. completed in the Big Injun sand its test on Ash heirs' farm, good for 10 bbls. a day. On Fishing Creek, Grant district, Wetzel County, the South Penn Oil Co.'s No. 4 on the Charles Batson farm is a gasser good for 1,000,000 feet in the Gordon sand. In McClelland district, Doddridge County, D. E. Braden & Co. have a rig up on the M. E. Ash farm.

Tests Drilling and Starting

In Clay district, Wetzel County, the Wetzel Gas Co. is rigging up to drill a test on the S. E. Longstreth farm. In the same district, the Littleton Gas Co. has drilled to a total depth of 2,695 feet its test on the James Orndoff farm and shut down. It will abandon the hole, having found neither oil nor gas in commercial quantities. In Center district, the Hope Natural Gas Co. has started to drill on the Jefferson Miller farm. In Union district, Marshall County, Campbell & Cole have a rig up on the Mrs. Fred McClure farm. In the same district, the U. S. Stamping Co. made a location on the J. V. Markey farm. In Liberty district, Marshall County, the Hope Natural Gas Co. is building a rig on the J. H. Yoho farm. In the same district, Klugg Brothers & Co. moved in tools to a location on the J. W. Mason heirs' farm.

The Heck Oil Co. is rigging up on the A. W. Thorn farm in Reedy district, Wirt County. The same company is drilling at 1,500 feet on the Sanson George farm. In Reedy district, Roane County, the Fairview Oil Co. is drilling on the B. G. Stutler farm. It has reached a depth of 2,400 feet and shut down for orders. In Clay district, Monongalia County, the Owens Bottle & Machine Co. started to drill on the Daniel Glasscock farm. In Grant district, Ritchie County, the Hope Natural Gas Co. is drilling on the J. C. Smith farm. In the same district, Nay, Kintzner & Co. are rigging up on the James Shahan farm. In Union district, E. E. Zinn started to drill on the G. P. Black farm. In the same district, Baker & Smith are due in the Maxon sand on the John Alexander farm. In Grant district, the Warrior Petroleum Co. made the location for a test on the A. R. Phillips farm. In Clay district, Charles Lewis & Co. is drilling on the Rex Collins farm. The Hope Natural Gas Co. is rigging up on the Mary C. Lewis farm. In Murphy district, the same company started to drill on the John J. Davis farm. The same company is rigging up on the Traner Mitchell farm. In Troy district, Gilmer County, the Hope Natural Gas Co. is building a rig on the J. M. Wood farm and shut down on the Charles H. Lewis farm. In Courthouse district, Lewis County, the Crystal Oil Gas Co. is rigging up on the John Hammer farm. In Cove district, Doddridge ounty, C. A. Vanhorn is rigging up on the R. V. Conley farm. In Central district, Roy Shinn started to drill on the H. Shinn farm. In Collins Settlement district, the Mud Lick Oil & Gas Co. is rigging up on the S. B. Perine farm.

New Work in Calhoun County

Calhoun County has considerable new work under way and starting. Operators have four chances for oil or gas in this county. Producing wells have been found in the Cow Run, Salt and Big Injun sands and the Berea grit. In Sheridan district, Crawley Brothers started to drill on the W. P. Seales farm. In the same district, the Penn Royal Oil Co. rigged up to drill deeper its old well on the Taylor heirs' farm. In Lee district, Martin Crawley is delayed with a crooked hole at his test on the Joel W. Holbert farm. In Otter district, Braxton County, the West Virginia Central Gas Co. is drilling on the O. G. Beckett farm. In DeKalb district, Gilmer County, the Pittsburgh & West Virginia Gas Co. has made a location on the George W. Miller farm. In Center district, the McCall Oil & Gas Co. is due in the Big Injun sand on the George W. Sager farm. The same company started to drill No. 4 on the L. R. Moore farm. In the same district, Miller & McIntosh are fishing for tools on the J. H. Godfrey farm. In Murphy district, Ritchie County, the Carnegie Natural Gas Co. has rigs up for tests on the I. C. Goff and Granville Smith farms.

Southeastern Ohio

In quite a list of completions the southeastern Ohio fields had nothing better to offer than a 25-bbl. producer, located in the deep sand territory in Lot 3, Monroe Township, Holmes County. It is the Central Ohio Gas Co.'s second test on the Oscar Korns farm. In Hardy Township, one-half mile northeast of the Ohio Gas Co.'s test on the James Forgy farm, the Logan Natural Gas Co.'s Scott V. Mast farm is a 1,000,000-foot gas well, showing some oil in the Clinton sand. In Hopewell Township, Section 18, Muskingum County, the Tague Oil Co.'s test on the G. M. Ervin farm is through the Clinton sand and dry. This location is 1 mile south of the Pure Oil Co.'s test on the Johnston-Cone farm.

Licking County

In Lot 5, Madison Township, Licking County, W. W. & A. T. Wehrle have a gasser in the Berea grit at a second test on the O. C. McClelland farm. No. 3 on the same farm is starting. In Lot 13, the same parties completed No. 7 on the Frank Darnes farm, good for 3 bbls. a day in the Berea grit. In Lot 21, Franklin Township, the same parties have a 4-bbl. pumper in the Berea grit at a second test on the Smith Brothers' farm. In Lot 5, Hanover Township, the Ohio Fuel Supply Co.'s test on the W. E. Rector farm is a 5-bbl. pumper in the Clinton sand. In Section 2, Franklin Township, Moore & Adams are drilling on the T. L. Stevens farm. In Section 28, Richland Township, Fairfield County, the Packard Oil & Gas Co. completed in the Clinton sand a test on the Otto Combs farm. It is 1,200 feet east of the Clinton Oil & Gas Co.'s test on the Edward Morrow farm and is a gasser good for 400,000 feet.

Shallow Sand Completions

In the old Corning Field, Monroe Township, Perry County, O'Conner & Keller completed through the Berea grit No. 19 on the Sunday Creek Coal Co.'s property good for 5 bbls. a day. In Section 21, Jackson Township, Knox County, the Arkansas Fuel Oil Co. completed and shot in the Berea grit No. 9 on the L. V. Dugan farm, a 3-bbl. pumper. In Center Township, Noble County, John Kemp and others drilled Nos. 4 and 5 on the John McWilliams farm through the Buell Run sand, both dry. Frank Goddard & Co.'s test on the Ruth Upple 10 acres in Newport Township, Washington County, is a light pumper in the first Cow Run sand. In the same township, Brown Brothers & Valentine Brothers started to drill a second test on the Martin Matheny farm. The Valentine Oil Co. has started to drill on the Jessie Valentine heirs' farm. In Section 30, Perry Township, Monroe County, T. L. Covert & Co.'s No. 4 on the G. B. Cox farm is good for 3 bbls. in the Keener sand. In Section 15, Knox Township, Columbiana County, the Kirk-Dunn Oil Co. completed in the Berea grit No. 12 on the Yaggi heirs' farm, not good for more than 2 bbls. a day. In Section 22, the Coraopolis Savings & Trust Co. started to drill on the A. L. Stoffer farm. In Section 4, Green Township, Hocking County, the Red Top Oil & Gas Co. is drilling No. 6 on the Chute heirs' farm.

Southwest Pennsylvania

The only section in the southwest Pennsylvania fields attracting any attention at this time is in North Strabane Township, Washington County, where Tague, Lutton & Co. got a fine producer a few weeks ago on the R. G. Lutton farm. The well has been declining steadily and is now down to 80 bbls. a day. The size of the well and the way it has been holding up is calling out some new work in that vicinity. Tague, Lutton & Co. have made the location for No. 3, 500 feet northeast of No. 2. The same parties have made the location for a second test on the J. S. Mansfield farm, 1,000 feet northeast of No. 2 Lutton. Located 1,500 feet west of the same well, Brown & Conklin are rigging up for a test on the C. A. Thompson farm.

One mile north of Nineveh, Morris Township, Greene County, the Manufacturers Light & Heat Co. has a gasser good for 800,000 feet in the Nineveh 30-foot sand at a test on the S. Gardner farm. In Perry Township, Kennedy, Brock & Co. have a duster in the Big Injun sand at a test on the Spencer Kennedy farm. They are undecided as to

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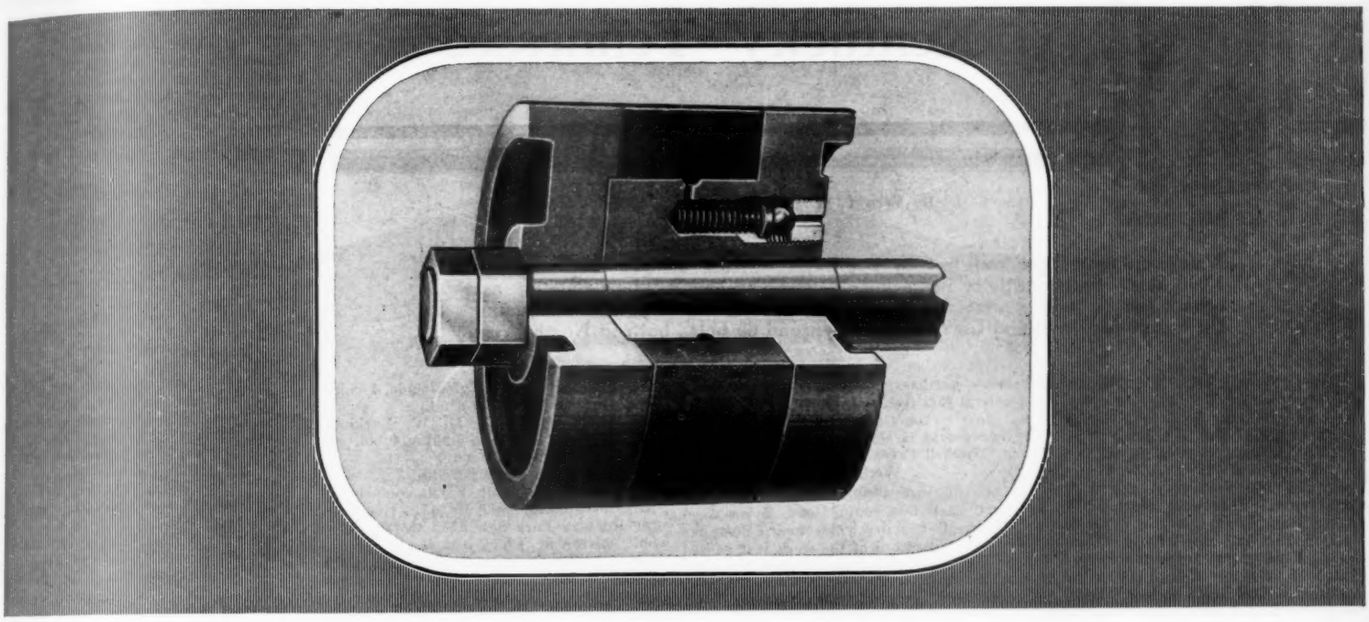

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part of the sand and 3 bbls. of dark oil in the lower part of the sand. On heirs' farm.

Central Ohio Gas Co.'s second test on

Kentucky—Tennessee

By Vern T. Whitney

Dafoe and associates' well in Clay County, Tennessee, still flowing estimated 1,000 bbls. Starts activity in Jackson County adjoining. Ben Fleming and others get 200-bbl. producer in Idamay extension, Kentucky. Union Gas & Oil has 80-bbl. well and Garrison & Townsend 60 bbls., both in North Weir.

BOWLING GREEN, Ky., Nov. 24.—The most sensational news of the past few weeks in these fields was the bringing in by Dafoe and associates of No. 5 well at Tinsley's Bottom in the south-central portion of Clay County, Tennessee less than 100 feet from the Jackson County line. This well, which is No. 2 on the Ham Lynn tract, in a horseshoe bend of the Cumberland River where the owners have 12,000 acres under lease, is estimated at better than 1,000 bbls. per day from a total depth of 433 feet just on top of the Modoc sand. The first Sunnybrook at from 240 to 247 feet and the second Sunnybrook from 285 to 290 feet showed a little oil and salt water. The Pencil Cave was encountered from 325 to 328 feet and the hole was cased to 330 feet. In the first sand under the cave, struck from 382 to 385 feet, a 5-bbl. well was had but drilling was continued to the Modoc sand, topped at 433 feet, where the well commenced flowing. It started off at the rate of 250 bbls. for the first five hours and is still going at that rate, flowing for 10 minutes and taking a three-minute breathing spell.

On account of lack of tankage all available men and teams in the vicinity were enlisted to dig earthen storage. Two two-inch lead lines were laid to the earthen storage and oil is allowed to flow into it while steel tankage is being erected. At this writing three 250-bbl. tanks are full and about 1,000 bbls. is in the earthen storage.

The first attempt on the Lynn place was shut down at 400 feet with a fishing job; No. 2 was completed for 30 bbls. naturally at 438 feet. The Pencil Cave in this well was topped at 325 feet. On the Williams farm, adjoining the Lynn, No. 1 was drilled to 700 feet several years ago, and, although it had a fair showing, it was never shot. No. 2 Williams is a small pumper at 500 feet.

Dafoe and his associates are now drilling No. 6 well at Tinsley's Bottom about one-half mile southeast of the Lynn gusher.

Tinsley's Bottom is 10 miles south of Celina, the county seat of Clay, and 18 miles southwest of the development at Kettle Creek in Cumberland County, Kentucky.

The bringing in of this gusher will no doubt result in the drilling of a number of holes in its vicinity, particularly in the adjoining county of Jackson. As the oil was secured in a sand below the Pencil Cave, it is the consensus of opinion that the production will hold up well, as this sand, the Modoc, is showing good staying qualities across the State line in Cumberland County, Kentucky.

The only hardship of drilling in this section of Clay County at present is the lack of pipe line facilities, the nearest being the Paragon's line at Kettle Creek. However, the oil can be loaded in barges and shipped to some point on the Cumberland River when the water is high enough for boats to run.

On the J. Patterson tract 1½ miles south of Willow Grove, Sauls and others' No. 3 was a duster at 635 feet, 145 feet below the Pencil Cave.

Between Willow Grove and Sulphur Creek, Alexander and associates' No. 2 Stover was drilling at 230 feet. Spain & Co.'s No. 2 on an unknown farm, 2½ miles northeast of Celina, was making hole at 302 feet.

In Overton County, W. H. Boswell is reported to be down 106 feet in his test at Mitchell Creek.

Week's Work

An increase of 234 bbls. in flush production, 9 less completions, 2 less producers, 6 less dry holes and 1 less gas well is the record of the week just passed in the whole of Kentucky when compared with the previous week. The wells were distributed by counties as follows:

County	Comp.	Prod. Wells	Prod.	Dry	Gas
Lawrence-Johnson ..	5	4	145	1	0
Johnson-Magoffin ..	2	2	42	0	0
Menifee	2	0	0	2	0
Lee-Owsley	6	4	292	2	0
Flemming	1	1	5	0	0
Elliott	1	1	2	0	0
Breathitt	1	0	0	0	1
Powell	1	1	30	0	0
Wayne	1	0	0	1	0
Estill	1	1	30	0	0
Wolfe	1	1	30	0	0
Warren	2	2	9	0	0
Allen	3	0	0	3	0
Barren	3	3	11	0	0
Total	30	20	596	9	1
Total last week..	39	22	362	15	2
Difference 9		2	234	6	1

Lee-Owsley Counties

The best well of the week in the Eastern Division was that of Ben Flemming and others in their initial test on the Elmer Evans 20 acres, in the eastern extension of the Idamay Pool, in district No. 35, of Lee and Owsley counties. This completion started off making 200 bbls. the first 27 hours pumping from the Idamay sand and is considered one of the best wells yet completed in this district. In this same area, Marcum & Congleton's No. 1 Rowland pumped 5 bbls. from the regular pay at around 1,400 feet. On the J. E. Mays farm, district No. 35, Hupp, Duff & Co.'s No. 1 came in for 75 bbls. flush after being shot with 115 quarts of nitro at from 1,430 to 1,488 feet. The Carter Oil Co.'s No. 1 Brandenburg pumped 12 bbls. from a total depth of 1,072 feet. Sand from 1,036 to 1,046 feet was treated to a 40-quart shot.

A test drilling by Beamer and others on the Price farm three-quarters of a mile in advance of production at Idamay was dry and abandoned.

T. F. Hale's No. 1 test southeast of the Owsley County gas field was dry and abandoned in the Corniferous sand.

Ed Riggenbarter and others have let a contract for a well to be drilled on the Addison farm on Duck Creek about 1 mile south of the main Idamay Pool. It is reported the Atlantic Oil Producing Co. has made a location on its Judd farm offsetting the well of Flemming and associates on the Evans tract in the eastern extension of the Idamay Pool.

North Weir Field

In the North Weir sand district of Lawrence and Johnson counties, the Union Gas & Oil Co. finished No. 1 R. N. Sparks, No. 2 farm, district No. 22, for a flush of 80 bbls. at a total depth of 928 feet. The sand from 870 to 928 feet was shot with 75 quarts of nitro. In the same district this company's No. 1 W. O. Gambill was a duster in the Weir sand.

Garrison & Townsend's No. 4 C. K. Dobyne, district No. 22, made 60 bbls. when drilled in from the Weir sand at 794 feet.

In district No. 32, the Pluto Oil Co.'s No. 5 on the Robert Fyfee made 4 bbls. on jack from the Weir sand.

In district No. 33, M. W. Larkin's No. 1 George Sayler is making 1 bbl. on power from the Weir pay.

South Weir Field

In the South Weir Field, comprising parts of Johnson and Magoffin counties, the Burning Fork Syndicate scored a 32-bbl. starter at 1,068 feet in its No. 8 on the C. Roark farm, in district No. 31, near the hamlet of Ivaton. The sand encountered from 1,027 to 1,062 feet was shot with 70 quarts. In the same district, the Magoffin Development Syndicate made a 10-bbl. strike in No. 2 on the Julia Sayler place from the Weir sand.

Menifee County

Two dry holes is the record of the week just passed in the Menifee County Field. In district No. 6, W. O. Back's No. 1 Gilbert Bushford at 760 feet and the same parties No. 1 Gilson Bach at 780 feet proved failures. The latter test is in district No. 8. Back and associates are down 500 feet in their initial test at Leatherwood on the Gillespie lease which is on a branch of Beaver Creek.

Powell County

In Powell County, W. E. Hupp, trustee, finished a 30-bbl. starter on the Mays lease. It was No. 15 on the property and was drilled to a total depth of 693 feet. Thirty-seven feet of sand, the top of which was 643 feet, was charged with 100 quarts of nitro.

Estill County

In Estill County, Pratt & Scott got a good well in their No. 6 on an unknown farm 8 miles southeast of Irvine at a depth of 800 feet. It started off at 30 bbls. and settled to 23 bbls., according to reports.

Wolfe County

The Federal Oil Co. is reported to have drilled in a 30-bbl. well at 1,200 feet on the E. B. Roberts farm, in district No. 9 near the old Capton Pool. This is the third well drilled by the Federal on the Roberts farm.

Wayne County

In the Big Sinking Section of Wayne County, Bowden's No. 2 L. N. Morrow was a duster at 803 feet. A sand picked up from 783 to 793 feet was shot with 30 quarts. No. 1 on this property was also dry.

In the shallow sand field of Flemming County, Hawkins and others' No. 4 Pierce made 5 bbls. after a sand from 272 to 285 feet was shot with 20 quarts.

In the Breathitt County, the Petroleum Exploration is reported to have drilled in a good gas well on the Hurst farm at 1,200 feet.

T. J. Evan's No. 2 G. W. Kapples, district No. 34, in Elliott County made a 2-bbl. stripper at 1,300 feet.

Western Division

One of the largest deals ever consummated in the western division was made the past week when the World Oil Co.,one of the largest operating companies in the State, purchased the holdings of the Big Jack Oil & Development Co. in Warren County for a reported price of $68,000. The properties included in the deal are the R. L. Morris 228 acres on which there are 38 producing wells; the C. G. Davenport 222 acres with 20 wells, both in the Davenport Pool, and the Turner 30 acres on the Lost River Pike on which there are five wells. The production of the entire 63 wells is reported to be 60 bbls. net.

Pipe Line Runs

Pipe line runs reported by the different purchasing agencies in the field amounted to 112,735.11 bbls. for the month of October, a loss of 2,913.42 bbls. compared with September totals. The runs were distributed by counties as follows:

	Runs	Increase	Decrease
Warren	46,709.18	.....	2,779.57
Allen	32,757.54	2,759.33	.....
Owensboro Dist	-12,768.00	1,142.48	.....
Barren	11,473.50	.....	.....
Cumb.-Monroe..	6,626.29	.....	517.26
Simpson (App.)	1,200.60	.....	1,892.99
Hopkins (App.)	1,200.00	.....	555.41
		.....	1,070.00
Total October.	112,735.11	3,901.81	6,815.23
Total Sept.	115,648.53	.....	.....
Difference ...	2,913.42		

Warren County

The past week in Warren County showed but two completions, both of which were small pumpers. In the Hardcastle district 8 miles east of Bowling Green, Stewart & Bannon's No. 20 Cox pumped 5 bbls. after being shot with 30 quarts at from 495 to 503 feet. The shale was topped at 441 feet and drilled through at 491 feet. No. 21 is spudding to offset No. 19.

In the Bay's Fork section, 12 miles east of Bowling Green, Dafoe and others have a 4-bbl. pumper in No. 5 A. Reynolds at a total depth of 518 feet, approximately 50 feet below the black shale.

The Bull Bayou Oil Syndicate deepened its No. 11 Savage, on the Davenport Pool, from 305 feet where it produced about 1,200 bbls. since June, to 514 feet ond have what is estimated as a 10-bbl. pumper. A lot of salt water was found at its present depth. It is thought that if the salt water can be pumped off that the well will easily make 25 bbls. of crude.

Barren County

Although there were only three completions for the week in Barren County, it does not mean that there is any letup in drilling as the past week saw the starting of six new wells in scattered sections of the field. The recent completion of the Consolidated Gas Co. on the Hall Baker farm, a short distance north of Glasgow, stirred up quite a bit of interest and resulted in the starting of several wells in that area. The Wood Oil Co. is drilling two offsets to the Baker well, one on the Will Church and one on the John Church. As the log of the Baker well is important to operators in that section, a copy of it was secured which shows the following:

Soil at 35 feet; black lime, 35-205 feet; white lime, 205-335 feet; green shale, 335-365 feet; black shale, 365-415 feet; brown lime, 415-465 feet; gas sand, 465-485 feet; black muck and lime, 485-505 feet; brown lime, 505-515 feet; first oil sand, 515-532 feet; black lime, 532-562 feet; cap rock, 562-567 feet; second oil sand, 567-574 feet; black lime from 574-584 feet, total depth.

The lower sand was shot with 30 quarts of nitro and when put on pump it showed 23 bbls. flush. At this writing the well is making 20 bbls. A small amount of salt water was found at 30 feet below the black shale and the hole was cased at 190 feet.

In the Coral Hill area, 5 mile north of Glasgow, the No. 5 well on the L. H. Nichols farm, developed by Smith & Son, is pumping 4-bbl. from a total depth of 406 feet. Shale was from 313 to 355 feet and the sand which was shot with 20 quarts was from 391 to 400 feet. No. 6 is spudding in.

Bishop & Son's No. 2 Bishop, 1½ miles north of the Emery-Moore Pool, on Beaver Creek, started off at 4 bbls. at 300 feet. Shale was from 215-270 feet and the sand which was from 278 to 290 feet was shot with 10 quarts. Late reports state that this well is improving at every pumping and the owners hope it will show as good as No. 1 which made 20 bbls.

Two miles to the southwest of the Emery-Moore Pool, T. L. Gorby's No. 2 on the George Lessenberry was reported making 3 bbls. at 480 feet. Seventeen feet of sand was shot with 30 quarts.

Emery-Moore Pool: Fred Moore's No.

(Continued on Page 84)

The Advance Design

of Columbian Partition Mounted, 3-point Supported Truck Tanks is based on eight (8) issued patents:

March 12, 1918 May 25, 1920 Aug. 31, 1920 July 17, 1923
Sept. 23, 1919 May 25, 1920 Apr. 5, 1921 Aug. 28, 1923
Other Patent Applications Pending

This is merely an indication of the initiative and creative ability of the Columbian engineering staff.

Here is illustrated the truck tank of tomorrow. It is equipped with internal safety valves, automatically controlled. Control system is of the selective type, opening any one valve selected, or of the master type, opening all valves simultaneously. Control head is located in bucket box. The closing of the bucket box door automatically closes all internal valves. Fusible link closes them in the fire emergency. May also be tripped from driver's seat.

Fire regulations become more stringent every day. Columbian has met all regulations where called upon for a test. We believe we have produced an absolutely fire-proof truck tank.

These other exclusive features easily identify the Columbian and account for its wonderful performance—time has never yet measured its full life—no Columbian has ever yet worn out:

Partition Mounted Heavy wood sills and cross cradles (deadload) are eliminated. You can haul more live load without increasing the gross load on the truck. This lessens the cost per gallon per mile of hauling.

3-point Supported Front end of tank is carried on a single pivot point. This frees the tank and the truck of twisting strains. It lengthens the life of both tank and chassis—eliminates repairs. It makes the tank ride the truck like a swan rides the water.

Jointless Pipelines One piece welded pipe lines without threaded joints or right angle bends. Component units of the tank—not just screwed on attachments. Funnel outlets from compartments and pipe lines sloped toward the rear empty tanks 25% faster. Drain every drop.

Removable Side Racks Panel side or pipe rail side carrying racks are adjustable up or down and removable. Load them to the guards in the emergency or strip for the speed trip.

Welded-on Bucket Box Bucket box is a welded on continuation of the tank body—not an attachment. Has removable bottom for easy access to faucets.

A Single Steel Unit The tank body, its mounting, its pipe lines and its bucket box are expertly welded into a single unit—virtually one piece of high grade copper bearing steel.

Dished Heads & Partitions Heads and partitions are much heavier than commonly used and are dished on special machines in our own plant—the strongest heads and partitions put in any truck tank, bar none. Double partitions if wanted—only single Columbian partitions are needed.

Standardized Sizes Overnight shipping service may be had on Columbian standardized sizes. Concentrated production on these brings you the lowest available prices on quality tanks into which 30 years of tank building experience is built.

Truck Tanks
Oil Field Tanks
Bulk Station Tanks
Underground Tanks
Floating Tank Decks
Barrels, Buckets
Carrying Cans, Funnels
Faucets, Valves
Oil and Gasoline Pumps
Plates, Sheets, Angles

COLUMBIAN STEEL TANK COMPANY

EST'D 1894 TANKS FOR THE WORLD

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NEW YORK 30 Church Street
TULSA, OKLA. Owasso and Frisco Tracks
DALLAS, TEXAS 210 Southwestern Life Bldg.
LOS ANGELES, CALIF. 806 Wright & Callender Bldg.
SAN FRANCISCO, CALIF. 564 Market Street

NATURAL GAS DEVELOPMENTS

GAS PROBLEMS BEFORE CANADIAN ASSOCIATION

HAMILTON, Ont., Nov. 22.—For the sixth successive time, Charles E. Steele of the Sterling Gas Co., Port Colborne, was yesterday unanimously elected to the presidency of the Natural Gas and Petroleum Association of Canada. For first and second vice presidents, the retiring officers, P. S. Coate of the Chatham Gas Co., Chatham; and H. R. Davis of Buffalo, N. Y., both declined reelection. Their places were taken by Gordon D. Wickett of the Windsor Gas Co., Windsor, and S. B. Severson of the Dominion Natural Gas Co., Buffalo, N. Y. S. A. Morse of the Union Natural Gas Co., Chatham, was reelected secretary.

The directors elected were: P. S. Coate, Chatham; H. R. Davis, Buffalo; H. B. Pearson, Calgary, Alta.; Perry A. Little, Buffalo; E. P. Rowe, Toronto; J. B. McNary, Hamilton.

Improved conditions during 1924 resulting in greater stability of the natural gas industry in Ontario were reflected in the unusually brief report presented by Chairman H. R. Davis for the board of directors. The only matter of moment taken up during the year was the proposed reclassification of the natural gas industry under the Workmen's Compensation Act; and after conference with compensation board officials, it had been deemed advisable to retain the present classification.

For the laws and legislation committee, Major E. F. Sweet of Brantford, reported that the objectionable legislation with respect to "transmission franchises" and free gas for landowners had been amended by the Legislature. Under the new law, townships previously granted immunity from rate changes through classification of their franchises as "transmission franchises" were subjected to the rate-fixing jurisdiction of the Natural Gas Board; while the Natural Gas Commissioner was given authority to determine what would constitute a reasonable amount of free gas for a landowner. The committee expressed appreciation also of the work done by Col. R. B. Harkness, Natural Gas Commissioner, in standardizing the legislation and regulations governing drilling operations and the plugging of abandoned wells; thereby eliminating much confusion and uncertainty.

President Charles Steele, on being reelected, strongly urged persistent and intelligent educative work by the natural gas companies to place the real facts regarding the natural gas industry before the consumers. If they once got the real facts across to the public, the difficulties now troubling the industry would automatically disappear.

"Until the price of gas reaches a price commensurate with the price of substitute fuels," he added, "the Gas Conservation Act is a misnomer."

Regarding his work as representative of the natural gas interests on the Natural Gas Board of Reference, President Steele interpreted his duty to be bringing out of the actual facts. Where he had found the slightest element of doubt he had given the benefit of that doubt to the consuming public and would continue to do so. Forecasting new legislation to permit an appeal to the courts from the rate fixing decisions of the board, whatever the gas companies might think, as a member of the board he welcomed such a step. He urged continued cooperation to put the industry in Ontario on a sound basis.

Papers were read by Natural Gas Commissoner Harkness on "Estimating Recoverable Residue Supplies of Gas and Oil" and "The Value of the Natural Gas Industry to Ontario." Colonel Harkness pointed out that the industry in Ontario represented a capital investment of $25,571,000 and 839 wage earners employed, exclusive of drilleds. In 1923 the total production was 8,128,413,000 feet with a retail value of $4,066,244. Substitute fuels to render the same service as this natural gas would have cost Ontario consumers $14,432,432. He made a strong plea for the economical utilization of natural gas through employing efficient cooking and heating devices.

"Reduction of Gas Losses" was the title of a paper given by Victor A. Ogilvie, engineer of the Dominion Natural Gas Co.

Dr. W. S. Dyer of the Ontario Department of Mines, spoke on "Geology of Southern Ontario."

"Oil and Gas Possibilities in Ontario," were discussed by E. P. Rowe, petroleum geologist, of Toronto, who made a strong appeal for more extensive development work, particularly along the line of deep drilling to test the Trenton formation, which underlay all southwestern Ontario. He pointed out that though the Trenton limestone area in Ontario was extensive, not more than 50 tests had ever been carried to a conclusive depth and properly finished. Gas had been found in the Trenton limestone in Bruce Peninsula and in the Dover Field, 120 miles apart.

The convention decided to meet in 1925 in Toronto, the date being left to the executives, though a two-day convention was suggested.

COMPLETE FIRST WELL IN SHOLOM ALECHEM

ARDMORE, Okla., Nov. 22. — Gauge of the output of the Levant-Ringling No. 1 on the Loftis farm, in the center of the northwest of the southwest of the southwest quarter of Section 27-1s-3w, registered 12,000,000 feet. Rock pressure tested 940 pounds, but in the opinion of the operators it will go to a higher pressure figure. Sand yielding the gas was drilled through at 3,192-3,210 feet and the test will be temporarily completed as a gasser, with the Lone Star Co. connecting. The Lone Star line runs only 360 feet west of the location.

This is the first gas well to be completed in the Sholom Alechem Field and is the largest gas yield found in the district. The location of the Levant-Ringling well is between the Humble-Gregg 625-barreler in Section 28-1s-3w, and the Simpson-Fell producer in Section 34-1s-3w. However, the Sykes-Heenan-Coe dry hole in Section 34-1s-3w, lies between it and the Simpson-Fell well.

FOUR NEW DEEP TESTS WASKOM COUNTY, TEX.

MARSHALL, Tex., Nov. 22. — With more than 20 gas wells, having production capacities of from 10,000,000 to 40,000,000 feet daily, already completed, with new operations beginning every day and with two big gas lines into the field completed and ready to begin carrying gas to Shreveport and Beaumont, the next important step expected in the Waskom Field is five deep tests for oil.

It is understood the Gulf Refining Co. has bought oil rights on all property controlled by Thigpen & Herold, paying $40 per acre and allowing Thigpen & Herold to retain one-fourth royalty rights, and that the Gulf Co. plans to sink four deep tests for oil immediately.

QUIT HAWTHORNE GASSER

INGLEWOOD, Cal., Nov. 22.—The Hawthorne gasser which attracted attention to this vicinity a short time ago is about to be abandoned. The McFadden-McDowell-Bering interests who are backing the well, have decided to skid the rig. The blowout occurred at approximately 1,100 feet, undoubtedly puncturing the same gas zone as the Standard's Farrell and others in this section.

COLUMBUS FRANCHISE BEFORE THE COURTS

COLUMBUS, Ohio, Nov. 22.—On November 7 the Federal Gas & Fuel Co., serving natural gas to about half the people of Columbus, served notice that it would shut off the gas in the mains at midnight on November 10. This notice was neither so surprising nor sudden as it may seem to those unfamiliar with conditions in Columbus. The people of Columbus had been very carefully told what to expect if some satisfactory rate arrangement was not made on or before November 10, because on that day the Federal Gas & Fuel Co.'s franchise expired and it did not care to accept the franchise offered by city council.

Early in the year L. B. Denning appeared before council and suggested that the city be prepared to take action on a new franchise for the Federal company, since the old franchise expired on May 22.

On February 4, council passed an appropriation of $25,000 to engage someone to give advice in utility matters, and before the close of the month had hired H. R. Allensworth as consulting engineer.

On May 22 the franchise of the gas company expired, but by a "gentlemen's agreement" the Federal company agreed to extend the old gas rates of 45, 55 and 65 cents for 60 days in order to give the city time to gather data. This agreement was actually made on June 9.

Much discussion pro and con was heard at regular sessions of city council; on July 15 Mr. Denning asked council for a straight rate of 60 cents per 1,000 feet, but no action was taken. On July 25 the city's engineering adviser turned in a report, based on calculations of his own from information received from the 1916 report of the Federal company to the Ohio Utilities Commission.

On August 4 the council passed a 40-cent rate ordinance and offered the gas company a 25-year franchise. This was promptly rejected by the Federal company. Then a number of those who saw that the 40-cent rate was impossible got out a petition asking for a referendum vote on the question. Enough signatures were secured to comply with the law, and the vote was scheduled for November 4.

Just as a side light, it might be noted that on October 11 the Columbus Gas & Fuel Co.—serving the other half of the people of Columbus—filed a new 50-55-cent rate, and a 75-cent service payment, with the Ohio Utilities Commission.

When the vote was recorded on the 40-cent ordinance, it was found that the people had voted about three to one in favor of city council's action. They evidently were going to get gas at 40 cents, if that were possible.

This action brought out the statement from the Federal company that the 40-cent rate was impossible, as it was paying 40 cents wholesale for the gas bought from the Ohio Fuel Supply Co. Mr. Denning announced that as the company's franchise expired at midnight on November 10, the mains would be shut off. He expressed the belief that this was the only way in which the company could protect its interests.

On November 8 City Attorney Leach filed a petition in Common Pleas Court asking that the company be enjoined from shutting off the gas. The excitement was intense, because it was not until the very last day, November 10, when Judge Kinkead did issue a temporary restraining order.

The next day the argument started in Judge Kinkead's court, the city trying to show that the Ohio Fuel Supply Co. and the Federal company were one concern, because many of the same men are interested financially in both companies. They even tried to prove that the Ohio Fuel Supply Co. owned the Federal company. The company secured the services of Cecil B. Elmes, consulting engineer, of Chicago, who made a hurried inventory of the Federal company's property and announced a valuation of $2,132,453.

From November 10 until November 18, when the gas company completed its testimony before Judge Kinkead, much evidence was brought forward in an endeavor to fix a proper ad interim rate, until a permanent rate for distributing gas in Columbus is fixed. Much of this evidence brought out that a rate of from 65 cents to 85 cents would be closer to a proper rate based upon a 10 per cent return. The figures were based on both replacement valuation and actual inventory of property used in giving gas service to Federal patrons.

It will probably be several days before Judge Kinkead will render a decision in the matter, but it looks as if the city had forced the Federal company to bring out facts that may render a higher rate necessary for Columbus gas users.

TO HEAR COMPLAINTS AGAINST GAS COMPANIES

HARRISBURG, Pa., Nov. 22.—Fifty complaints against seven natural gas companies, the largest number ever received for one hearing on a single line of public service, have been listed for the sitting of the Public Service Commission in Pittsburgh on December 3. Almost half as many more against other companies have been filed to be taken up subsequently.

Members of the commission say they plan to group all the gas complaints from Pittsburgh and immediately adjoining districts and Johnstown, whose supply company is allied with one of the companies in the Pittsburgh region, for one general series of hearings to dispose of the gas question in that part of the State.

Matters of supply, service and rates will be considered in the inquiry. There are 18 complaints against the Peoples, three against Johnstown Fuel Supply, nine against Equitable, one against Allegheny Heating, one against Monongahela, three against Manufacturers and 13 against Greensboro.

FIND SECOND GASSER IN TAFT DOME AREA

MUSKOGEE, Okla., Nov. 22.—Two wells out of three trials is the record now of H. E. Williams, and others, Muskogee men, in their search for production on the Taft Dome, 9 miles west of Muskogee. The first attempt was a gas well at 1,400 feet. The second was a failure in the Wilcox sand at approximately 2,200 feet.

Their third venture is a 6,000,000-foot gas well, its location being the center W half NW NW, Section 17-15-17. Top of the sand came at 1,385 feet and the sand was only scratched. There is a little oil and a little water coming along with the gas, but it is believed there will be no difficulty in handling the water. The well has been cased, tubed and shut in, and the Francis Brick Co. has laid a line to it to convey the gas to its main line reaching to its big brick plant at Boynton.

NEW FIELD IN STEPHENS

DUNCAN, Okla., Nov. 22.—Indications for the opening of a new gas field in Stephens County, only 300 yards from the east limits of Duncan are apparent in the Shoptaw and others wildcat, center of the south half of north half of Section 4-1s-7w, which topped sand that revealed a good corebarrel showing of gas at 2,790 feet and has cemented casting at that depth. It was drilled with rotary tools. Several good gas showings were encountered at shallower levels with the best at 1,400, 1,800 and 2,200 feet.

We Are Thankful

In 1621 Governor Bradford set a day for Thanksgiving at Plymouth, Mass. Primarily it was set aside as a harvest festival. So we in the busy business world of America in all solemnity commemorate and perpetuate this day set aside by our Pilgrim fathers in feasting and thanksgiving.

Thankful for our loyal supporters.

Thankful for our ability to serve.

Thankful to be able to serve our clientele in such a matchless way.

Thankful to our patrons for it was their loyalty that kept us striving to do better.

Thankful for the dull days as it gives us time to prepare for the busy days that are to come.

Thankful that the pendulum of business will swing as far one way as it has the other.

Thankful for the snappy days that are just beyond.

Thankful for the loyal friends in the world of Oil.

Thankful in the knowledge that our friends and patrons will have a royal bird done to taste and all the trimmings.

Thankful for the bright prospects in the sunshine of business prosperity.

LET'S GO.

Robinson-Packer Company

Factories:
Coffeyville, Ks.
Phone 66

Executive Office:
Tulsa, Okla.
Phone 3-8191—3-8192

Branch Store:
Blackwell, Okla.
Phone 606

871,000 and 839 wage earners employed, Farrell and others in this section. of Cecil B. Elmes, consulting engineer, best at 1,400, 1,800 and 2,200

EQUIPMENT AND SUPPLIES

STEEL OPERATIONS ARE PICKING UP; OIL COUNTRY BUYING ALSO BETTER

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 24. — The general iron and steel market situation has definitely rounded a turn and is on the mend. There is a favorable trend rather than a spectacular change, for there was no room for the latter, seeing that there has been a fairly good market since some time in August, while this is not the time of year when really heavy buying would naturally occur.

Steel buying fell off progressively for about three weeks before the election, while since the election it has been picking up and is now at as good a rate as before the decrease began.

As to prices, there is no trend by way of a general advance, the tendency being for those lines to advance that have suffered most in the decline, coke, pig iron and in finished steel products plates and sheets. In Connellsville furnace coke, buying for first quarter has just begun, with a price range of $3.25 to $3.50, against $3.25 done for the current quarter, and with inclusion of a wage clause, which is important as operators think it quite possible they will have to advance wages back to the Frick scale, from which they departed in May and June.

Buying Pig Iron

In pig iron, a buying movement started in a couple districts before the election and this has since spread to all districts, with a total turnover on the movement of say 700,000 to 750,000 tons. Prices have stiffened in most districts. In the Pittsburgh district all grades of pig iron recovered their recent 50-cent loss and there is quite a tendency to advance farther.

In finished steel products, 1.80 cents on plates is not being shaded as it was before the election, and mills hope to work the market up to a level of 2.00 cents, where merchant bars have been right along. Sheets also are firmer. There is now scarcely any shading of the regular prices, while at least two mills have advanced prices $2 to $3 a ton, expecting others to follow and being content to lose business meanwhile as they are comfortably sold up to the end of December. Prospects are that the general market on sheets for first quarter will be $3 a ton above the recent level. Hot and cold rolled strips have worked their way up in the past 10 days by $3 a ton.

While these advances are not important from a tonnage standpoint in the general steel market, they are very important in disclosing a new trend, for the fact is that from April, 1923, when the steel market reached its top, until quite recently there was no advancing or even stiffening at any point. The steel market was either declining or stationary. The decline in the general average was not large, however. Merchant pipe and oil country goods did not decline at all, except by way of new basing points, other than Pittsburgh, being established.

Oil Country Goods

Steel mill operations continue at 65 to 70 per cent of capacity, or at the best rate since last Spring. Approximately the present rate is likely to continue until say the middle of December, when there is usually a slowing down, with a corresponding recovery immediately after January 1. Prognostications are that steel buying and production in the first half of 1925 will be much better than in the present half year and quite possibly better than in the first half of either this year or last year.

Buying of oil country goods, which had been tapering off to rather small proportions, has been picking up in the past two weeks, chiefly through increased buying in Texas and Oklahoma. The pipe mills appear to feel assured the turn has come in oil and that there is going to be more drilling henceforth. Demand for merchant pipe has continued good. Jobbers are holding down their stocks, but have to buy right along to balance their distribution. Pipe mills are operating at about 60 per cent.

NEW PYROMETER LINE ADDS MANY FEATURES

A complete line of indicating and recording pyrometers together with the usual thermocouple accessories was recently exhibited for the first time at the American International Steel Exposition, held in Boston, Mass. These Republic instruments, having just been designed, incorporate features that have been requested by users of pyrometers.

A Republic recording pyrometer has two independent charts instead of printing two scales on one piece of paper. By using two separate pieces of paper, it is possible to have any combination of scale ranges desired. Six-inch charts are used on the Republic Duplex Recording Pprometer. The actual range is 5¼ inches.

All Republic charts have 20 degrees Fahrenheit to each division. This is possible even with the 3,000 degrees Fahrenheit charts. All mechanism in the Republic recording pyrometer is mounted on a swinging bracket. Every detail of the complete assembly is visible and reachable without first removing other assemblies. The bracket on which all mechanism is mounted, also forms a cover for the electric system which is attached to the back of the bracket. Two screws hold the bracket closed and the electric system is thereby thoroughly protected.

Republic instruments are accurately calibrated for the external circuits stipulated, but if at any future time it is necessary to change the length of the extension leads, instantaneous and accurate adjustment can be made within the instrument.

A small toggle switch, which is plainly marked, "on and off" is built into the instrument which when closed short circuits the magnetic field and damps the movement of the pointer when in transit.

PLANT FOR OKLAHOMA CITY

OKLAHOMA CITY, Okla., Nov. 22.—The Hughes Tool Co. of Houston, Tex., has announced that it will build a service plant here immediately on a site purchased recently. W. C. Morgan will be in charge of the plant and the sale of Hughes products in the Oklahoma fields. Exceptional railroad facilities to all parts of the State is given as the reason for the location of the plant at Oklahoma City.

INCREASED OUTPUT

W. J. (Jack) Collier, Jr., sales representative for the Jones Oil Well Reamer Co., Tulsa, reports excellent results from the use of the Jones reamer on an old producing oil well of the Atlantic Oil Producing Co., in Township 9-9, Oklahoma. The output of the well was increased from 22½ bbls. daily to 50 bbls. after using the reamer, Mr. Collier asserts.

TO DISTRIBUTE TRACTORS

The Holt Manufacturing Co. of Peoria, Ill., makers of the Caterpillar tractors, announce the appointment of Haverstick & Co., Rochester, N. Y., as distributor for Holt tractors in western New York State.

NEW DRILLING DEVICE TO ELIMINATE SLIPS

The Chapman well drilling device, made by the Chapman Valve Manufacturing Co., Indian Orchard, Mass., is a new article intended to eliminate the use of slips, liners and spiders in drilling operations, preventing thereby the possibility of wedges crushing through, due to the weight of long strings of casing, dropping the casing and causing a bad fishing job.

The device consists of a cast steel spherical shell, split near the center line horizontally. Inside of this shell and resting on several shelves or brackets, cast integral with the shell, are a series of movable dogs or jaws so arranged that, by the simple turning of a handwheel, they may be moved in to grip, or out to free the inner casing as may be desired by the driller. The gripping jaws are knurled on the face so as to grip the pipe either up or down and in torsion. Numerous beneficial uses are claimed by the manufacturers.

NEW ARBON CATALOG

The new catalog of Paul Arbon & Co., Tulsa, is one of the most attractive and complete put out by the various equipment manufacturers during the present year. The catalog contains 40 pages in which the various specialties manufactured by the company are described and accurately illustrated. Among the articles included are the following: Proser swivel jar socket, Burns side hole swivel socket, underreaming swivel socket, spudding socket, Arbon interchangeable wire line clamps, Neilson temper screw, ratchet handle bar, Herrick wire line wrench, Arbon cable cutter, Standlee oil saver, Standlee tubing saver, Arbon control casing head, Arbon steam snuffer, adjustable choke, self-release swab, packer swab, packer jet, flowing jet, pumping jet, collapsible jet, Wigle expansion piston.

CONCRETE WATERPROOFING

An interesting pamphlet from the standpoint of modern scientific developments is the recently issued booklet published by The Truscon Laboratories, Detroit, Mich., entitled, "Science and Practice of Integral Waterproofing." The booklet shows how water proofing is applied beneficially to concrete work in constructing basements, cement stucco, reservoirs, cisterns, tunnels, standpipes, foundations, subways and masonry structures of all kinds.

The booklet goes into details on the subject, "Why Concrete Requires Waterproofing," and many other questions of vital importance to construction men, particularly those whose work takes them into the various phases of the oil business.

LIGHT WEIGHT TUBING TONG INTRODUCED TO OIL TRADE

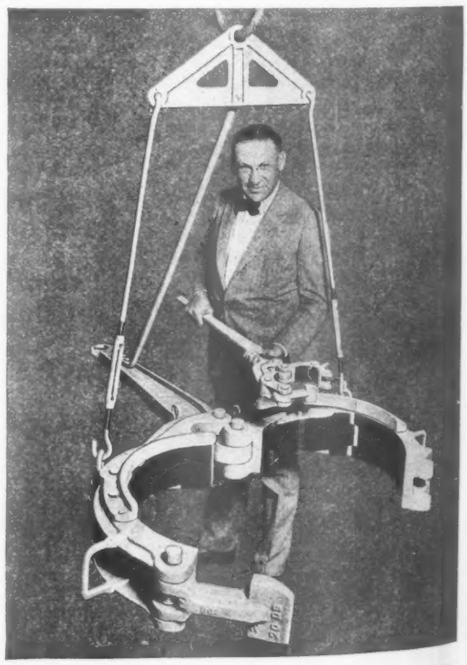
Following closely the announcement that deep forged rotary tongs were to be produced, the Wilson Oil Tools Corp. of Los Angeles, Cal., plans production of a lightweight tubing tong. This tubing tong is almost an exact replica of the large rotary tong, but with certain changes in the designing of the parts to permit of reducing the device in size to meet small diameter service.

The tong embodies the same spring latch principles as used in the larger tongs and in addition contains a spring in the end of the lever that actuates one of the jaws so that when the tong is placed on the tubing it will not slide downward, but will remain in place.

The die on the tong differs from the larger designs, being more simple. Only one die is used and this is made so that after the edge has become dulled after long usage it can be turned around and each of the four corners used in succession, thereby prolonging the life of the die practically four times the life of the ordinary die.

Both tubing and coupling can be tonged by one set of tongs either to screw the coupling and tubing together or to unscrew them. The tongs have a two-step latch lug that permits of changing the diameter so that it will fit both the tubing and the coupling adjustment.

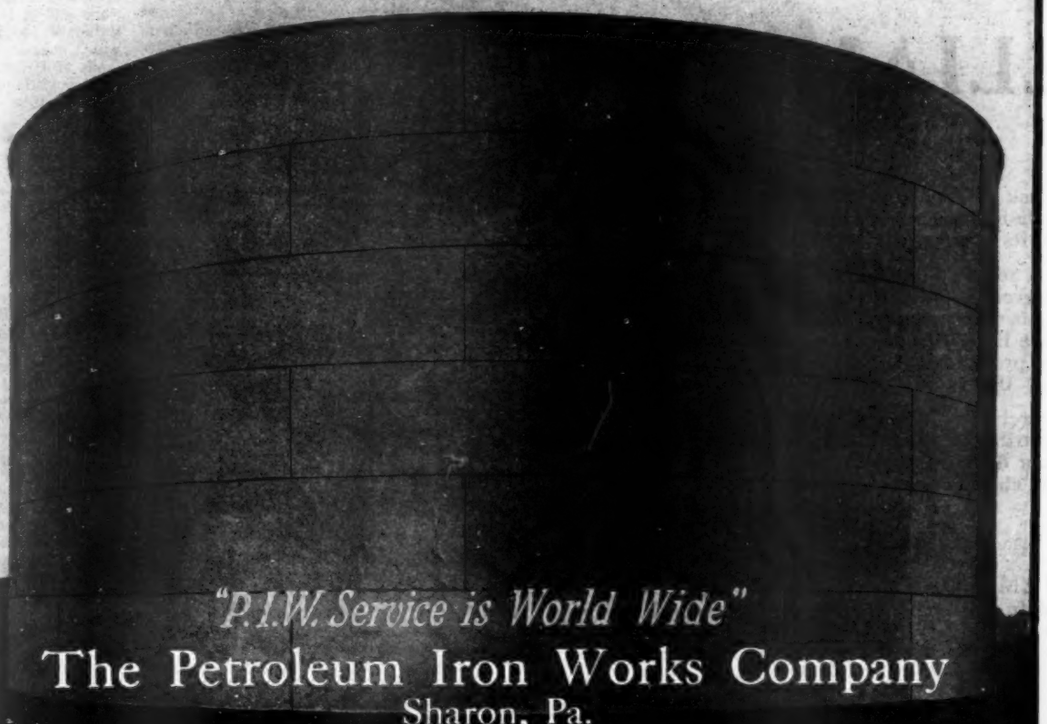
Not only can the tongs be used for tubing but for removing collars on pumps and pipe of various sizes. It can be used, it is said, for unscrewing collars to oil pumps, and in making the necessary connections required in attaching the pump to the tubing preparatory to lowering into the well.



Webb Wilson, general manager of the Wilson Oil Tools Corp., presenting the new Wilson tubing tong.

P.I.W.
STEEL PLATE CONSTRUCTION

It's more than storage, under present conditions, it's a sound investment.



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Sharon, Pa.

BRANCH PLANT, KANSAS CITY, KANSAS

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When you buy a

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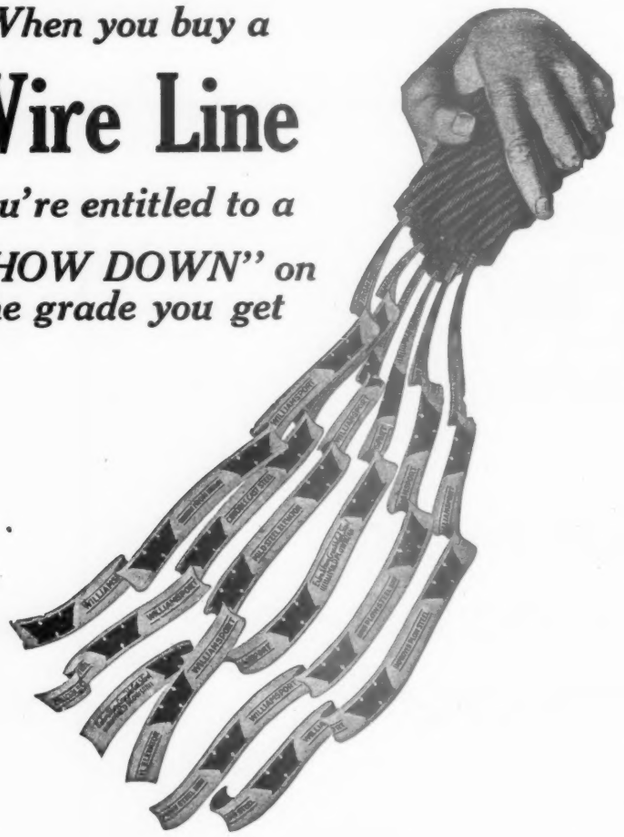
you're entitled to a

"SHOW DOWN" on the grade you get



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gives it to you

We don't ask or expect you to run the risk of getting the wrong grade of line, accompanied by the disaster that may come from its use.

We show it to you—BUILT INTO the line at the Factory where the grade is KNOWN. The label on a reel or a tag on the line is very uncertain evidence, easily removed. The Telfax Tape in Williamsport lines gives plain English unchangeable proof of make and grade, placed there for your protection. Use it.

Careful Purchasing Agents—Superintendents and Drillers are fast getting away from the use of lines, the grade of which is not definitely known. Can you afford to continue taking this chance?

Write for interesting literature.

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Blackwell	Okmulgee	El Dorado	Electra
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WILLIAMSPORT

SERVICE IN EVERY IMPORTANT FIELD

AMERICANS MAKE LITTLE PROGRESS IN GETTING FOREIGN CONCESSIONS

By Charles E. Kern

WASHINGTON, D. C., Nov. 24.—American participation in foreign oil concessions has not made the rapid progress that was anticipated by many persons in and out of official life during the past year. A year ago prospects were very encouraging for American participation in oil concessions covering the four northern provinces of Persia, the rich oil fields of Mesopotamia, and the petroleum deposit of northern Sakhalin Island. In a general way these three regions reputed to abound with prolific oil deposits were the outstanding attractive and unappropriated oil fields of the world. A year ago the attitude of the Turkish Parliament seemed by many to make certain that the Chester party, standing for American capital and American skill was predestined to develop vast concessions in Turkey, preeminent among which was the concession for the rich oil land embraced in Mesopotamia. Since that time many things have happened.

After the ratification of this concession by the Turkish Parliament, the stock control of the Turkish Development Co., incorporated in Delaware, drifted into the hands of Clayton Kennedy, a Canadian. This involves a long story that has been told in detail. It caused a contention among directors of the Turkish Development Co., which resulted in taking the dispute to arbitration. An award was made giving 90 per cent of the stock to the control of Mr. Kennedy and his friends and 10 per cent to Admiral Chester and his associates with a further agreement that the 90 per cent controlled by the foreign interests should be placed in trust to insure the enterprise as American. Then followed a default by lack of construction work contemplated by the concession and finally a nullification of the treaty rights, chiefly it was believed by members of the Chester Party, because the majority stock had drifted out of American hands. The formation of a trust agreement providing for American control did not, it was understood, satisfy some of the members of the Turkish Parliament who were insistent upon American control. Since that time there have been a variety of complications and the entire subject is held in abeyance pending agreement between Turkey and Great Britain over the boundary line dividing the newly created kingdom of Irak and that portion of the country to the westward under Turkish sovereignty. As the case now stands, this boundary line is to be determined by arbitration and it seems to be a question whether the rich Mosul oil field is to be apportioned between Irak and Turkey or whether it is to be determined as within the sovereignty of one or the other of those countries. The portion of this oil land that goes to Irak will be brought within the British mandate it is understood. When the soverignty of the Mosul oil field has been definitely fixed, which is apt to be at a far distant date, the Turkish Government will again take the question of giving concessionary rights for the development of its oil fields reputed to be among the richest of the world.

The Sinclair Concession

The concession negotiated by the Persian Government with Harry F. Sinclair has progressed to the point where all but two of the articles of that concession have been approved by the Persian Parliament. One of the stipulations contained in this concession provides for a loan of $10,000,000 by Mr. Sinclair to the Persian Government, the proceeds of which are to be expended largely in the United States. Numerous reports have been circulated during the last month calculated to throw doubt upon just what is going on in both Turkey and Persia. One is that a French company has offered the Turkish Government $25,000,000, the proceeds of which, it is stipulated, are to be expended in France for road building and other machinery in the construction of a national system of railroads in consideration of this French company being given the concession for the development of public improvements in Turkey, the concession to include the Turkish oil lands. Another report is that Mr. Sinclair has disposed of his holdings embodied in the Persian oil concession to an English company for $500,000. There is not much likelihood that either of these reports has any substantial foundation in fact, but they tend to becloud the situation as it exists today.

The northern part of Sakhalin Island, reputed to be very rich in petroleum deposits, is now under military control of the Japanese, who are holding it, in the language of diplomacy, as a guarantee for the payment of indemnities for the killing of several subjects of Japan. Harry F. Sinclair obtained from the Cheta Government a concession covering this half of Sakhalin Island, now in dispute, and that concession was ratified by the Soviet Government of Russia with a provision stipulating that within five years the Soviet Government should be recognized by the United States. This provision has formed a serious stumbling block for the Sinclair interests. A year and a half have rolled by without any substantial indication that the present government of Russia will ever be recognized so long as the Soviet rule of power continues. However, aside from that difficulty, the occupation of northern Sakhalin by the Japanese and the diplomatic exchanges between Russia and Japan have so beclouded the entire situation that little or no definite opinion can be formed here in respect to what the outcome may be.

Situation in Palestine

The oil situation in Palestine has progressed so far that the Standard Oil Co. of New York has made extensive explorations and it is understood here that the Standard has ceased its activity there, which suggests disappointment. The oil lands of Palestine were never reputed to be of anything like equal importance with those of Mesopotamia, Persia and northern Sakhalin Island, but they were sufficient to attract one of the great oil companies in exploration activity.

The public has very little insight at this time into any diplomatic correspondence between our State Department and foreign countries in respect to oil concesisons since the President sent to Congress a message in response to Senate resolution No. 149, adopted last February. This resolution related to oil concessions in Burma, Mesopotamia and Palestine, being correspondence with the Government of Great Britain. It also included correspondence with the Government of Holland, regarding oil concessions in the Dutch East Indies; with the Government of Portugal regarding oil concessions in Portugese East Africa; with the Government of Persia regarding oil concessions in Persia, and with the Government of Costa Rica, Argentina, Venezuela, Czechoslovakia, Mexico and Russia. However, the only correspondence transmitted related to the Governments of Great Britain, the Netherlands and Persia. The Secretary of State stated that there had been no such correspondence in connection with securing oil concessions between this Government and the other Governments named. The correspondence transmitted to Congress took place during two years following March 4, 1921. As extensively reviewed at that time, this correspondence really developed no definite agreement in respect to any question relating to oil concessions. The chief import of the Secretary's contention was that American rights should be strictly observed wherever those rights should have been established. It involved the contention that Americans were excluded from concessionary rights within the domains of Great Britain and Holland and that the United States had in no way discriminated against the nationals of either of those countries operating in the United States.

TANKS

ANY SIZE—ANY PLACE—ANY PURPOSE

The WARREN CITY TANK & BOILER Co

WARREN, OHIO

MEN KNOWN IN OILDOM

C. J. Yorath

C. J. Yorath was recently elected president and general manager of the Northwestern Utilities Limited, which holds a 21-year exclusive franchise from the city of Edmonton, Alberta, Canada, to supply natural gas from the company's gas field located about 80 miles from the city. Mr. Yorath received his education and early training in Cardiff, Wales, and was afterwards articled to James Allan, engineering contractor, Cardiff. His first municipal appointment was on the engineering staff of the city engineer of Cardiff.

After spending five years at Cardiff, Mr. Yorath went to London as deputy engineer and surveyor of the Borough of Action, and was responsible for the design and supervision of many large engineering works and civic improvements and the distribution of artificial gas by the Gas Light & Coke Company in the Borough of Action.

In 1913, he was offered and accepted the appointment of city commissioner of Saskatoon, Canada, and was there responsible for the operation of the public utilities including street railway, electric light and waterworks. Since 1921 Mr. Yorath has acted as commissioner of the City of Edmonton. In addition to being responsible for directing the general administration and finances of the city, he has also been in charge of the administration of the city's utilities, i. e., electric light and power, waterworks street railways and telephone.

Mr. Yorath is an associate member of the Institution of Civil Engineers, Great Britain, as associate member of the Engineering Institute of Canada, a member of the Town Planning Institute, etc., and is the author of many brochures on engineering and municipal subjects. The Northwestern Utilities Limited in addition to holding the gas franchise at Edmonton, hopes to extend its activities by controlling and operating other utilities in western Canada.

PERSONAL PARAGRAPHS

John McCort and Melville Thompson have returned to Petrolia, Ont., from the Trinidad fields.

* * *

N. M. Muir, district representative for the Southwestern Engineering Company, Inc., recently opened offices in Tulsa.

* * *

C. M. Lawson, independent producer of Coweta, Okla., one of the old-timers in the oil business, visited in Tulsa recently.

* * *

J. L. May and Robert A. Young of the May Tank & Supply Company, Casper, Wyo., left last week for an extended trip to Eastern cities.

Forrest M. Towl, of New York, president of the Southern Group of Pipe Lines, was a Pittsburgh, Pa., visitor last week.

* * *

C. E. Enlow, of the Transcontinental Oil Company, has returned to his headquarters in Casper, Wyo after an extended trip to California.

* * *

John T. Barnett, presdent of the Mountan Producers Oil Company, Denver, Colo., made a short business visit to Casper, Wyo., last week.

* * *

James A. McCrea, representative of the International Supply Company, Denver, Colo., returned last week from a business trip to Montana.

* * *

J. W. Schmid, connected with the sales force of the Republic Supply Company, in Los Angeles, Cal., was married recently to Miss Nina McKnight.

* * *

I. A. Smith, manager of the Tulsa office for the Standard Oil Company (Indiana), was called to Mountain View, Mo., last week by the death of his mother.

* * *

W. H. Gaither, of the National Transit Pump & Machine Company, Houston, Tex., is in the North Texas and Louisiana districts in the interests of the company.

* * *

James Douglas, geologist for the Union Oil Company of California, living at Fort Collins, Colo., visited friends and business acquaintances in Casper, Wyo., last week.

* * *

R. E. Bell, district manager in the Rocky Mountain territory for the Continental Supply Company, Denver, Colo., was in the Casper, Wyo., region on business recently.

* * *

W. D. Stewart, secretary-treasurer of the California Petroleum Corporation, returned to his office recently from Washington, D. C., where he has been spending several days on business.

* * *

C. S. DeMonbrun, of the Marland Oil Company of Colorado, returned to the Denver headquarters of the company last week after a short trip to the Ponca City, Okla., office.

* * *

Dr. Charles N. Gould, State geologist of Oklahoma, was a recent speaker at a luncheon given by the members of the Okmulgee District Oil and Gas Association in Okmulgee.

* * *

F. J. Wade, president of the Mercantile Trust Company, St. Louis, Mo., has been added to the directorate of the Roxana Petroleum Corporation and subsidiary companies.

* * *

D. H. Lyford, manager in the Rocky Mountain region for the Southwestern Engineering Corporation, with offices in Casper, Wyo., made a short business trip to Montana recently.

* * *

B. T. McNeil secretary of the Swiftsure Petroleum Company, Houston, Tex., has been made vice president. The company handles crude and topped oils and has terminal tanks at Texas City.

* * *

F. M. Cole, formerly with the Bureau of Mines at Casper, Wyo., is now engaged in geological work with Ernest Marquardt in New Zealand and Australia with headquarters at Sydney, N. S. W.

* * *

R. W. Boggs, of Parkersburg, W. Va., special agent of the right-of-way department for the Eureka Pipe Line Company, stopped off in Pittsburgh, Pa., last week on his way to Detroit, Mich., on a business trip.

* * *

Bert Summers, formerly with the Lucey Manufacturing Company, is in Houston, Tex., from Tampico, Mexico, where he is now located. He predicts a revival of drilling operations in the Mexican fields.

* * *

W. O. Ligon, Jr., for a number of years member of the firm of W. O. Ligon Co., certified public accountants of Tulsa, has left the firm and will open his own offices in the Exchange National Bank building, Tulsa.

Miss Alice Milam, secretary to E. H. Buckner, president of the Houston Oil Company, Houston, Tex., will spend the winter months at Morenci, Ariz. During her absence C. C. Evans will act as secretary to the president.

* * *

Ford Wilders of the gasket division of the McCord Radiator & Manufacturing Company, Detroit, Mich., is making a trip through the Mid-Continent, escorted by E. E. Robbins of the lubricator division of the McCord company.

* * *

Mills Bennett, president of the Swiftsure Petroleum Company, Houston, Tex., has returned from a trip to the Webb County, Texas, pools where the company has production and is a buyer of crude from other producers.

* * *

Joseph Volway for 40 years a resident of Petrolia, Ont., and for many years a driller, died very suddenly a few days ago, age 66. One son, Merle Volway, is a foreign driller. He returned from Borneo the day before his father's death.

* * *

O. R. Howard, E. B. Howard and Ivan Howard, three brothers, who are well known as producers in Oklahoma and California, have formed the Howard Petroleum Corporation, taking over the individual properties of the three men.

* * *

H. C. Miller, associate petroleum engineer of the United States Bureau of Mines, at San Francisco, spent the month of October in the Mid-Continent fields in connection with the safety and first-aid work being carried on by the bureau.

* * *

W. M. Trego, representing the J. H. Greenhalgh Company, made an extensive trip through the fields touching Luling, Somerset, Big Lake, Burkburnett and points in Archer County. This trip was made in the interest of Chicago investors.

* * *

W. A. Ponder, formerly connected with the Texas Oil Company at Amite City, La., has been appointed secretary to Governor Fuqua, of Louisiana, succeeding W. J. Everett who resigned this office to qualify as conservation commissioner.

* * *

Fred Zimmer has returned to Petrolia, Ont., after spending two years drilling in Venezuela. Billy Kerr of Petrolia left recently for Colombia, South America. Mrs. C. A. Poore of Leamington, Ont., has left to join her husband in the Burma fields.

* * *

James McKee, with the Buckeye Pipe Line Company, at Lima, Ohio, and H. S. Simpson of the accounting department of the Southwest Pennsylvania Pipe Line Company, at Oil City, Pa., are spending their vacation in Pittsburgh, Pa., calling on their old associates.

* * *

John B. Corrin, vice president of the Hope Natural Gas Company, and H. C. Cooper, chief consulting engineer of the same company, attended the meeting of the board of directors of the Natural Gas Association of America at St. Louis, Mo. Mr. Corrin is president of the association.

* * *

F. B. Fretter president of the National Refining Company, of Cleveland, Ohio; A. Rogers, general manager of the company's plant at Findlay, Ohio, and P. Littlefield, general manager of the Canadian Oil Refineries, Ltd., at Toronto, Ont., paid a visit of inspection to the Petrolia plant recently.

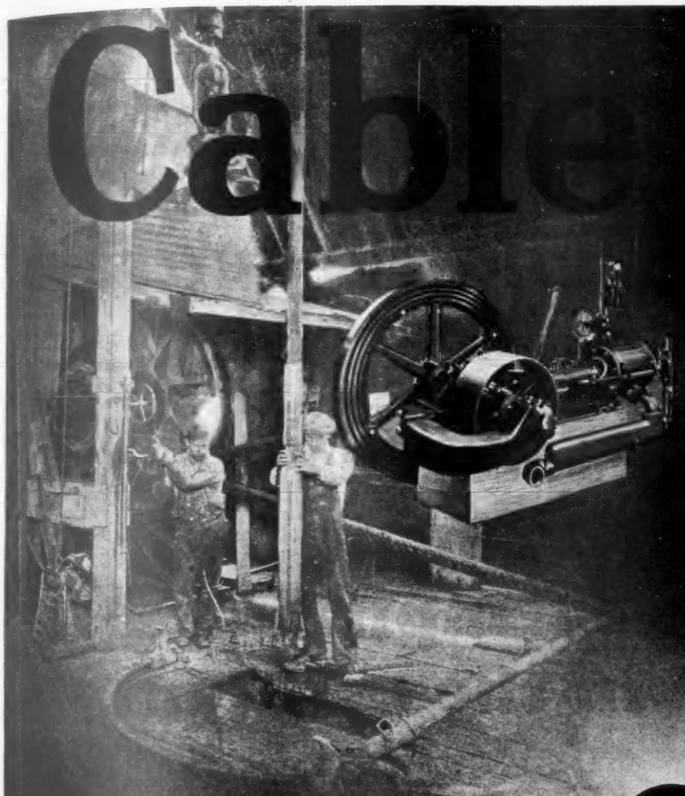
* * *

C. A. P. Southwell, Government geologist of Trinidad, British West Indies, has been in Tulsa for a few days while on a visit to the major oil fields of this country. He is especially interested in core-drilling for determining the character of oil sands, and will proceed to California for study of the methods used there.

* * *

James Ingram and Clarence Bainter, Casper, Wyo., officials of the National Supply Company, (Midwest), will leave this week for a trip through the National's manufacturing plants in the East. They will visit the main office in Toledo, Ohio, and also the plants in Pittsburgh, Pa., and others States. District Manager Oscar Thomas and C. M. Daniels will return shortly from Toledo, where they have been on a visit to the company's headquarters.

Cable



As drilling has become more severe, due to increased depth of wells and in consequence heavier strings of tools to be handled, we have strengthened the shafts of "Oilwell" Engines to meet these conditions by furnishing an outboard bearing as illustrated at the left.

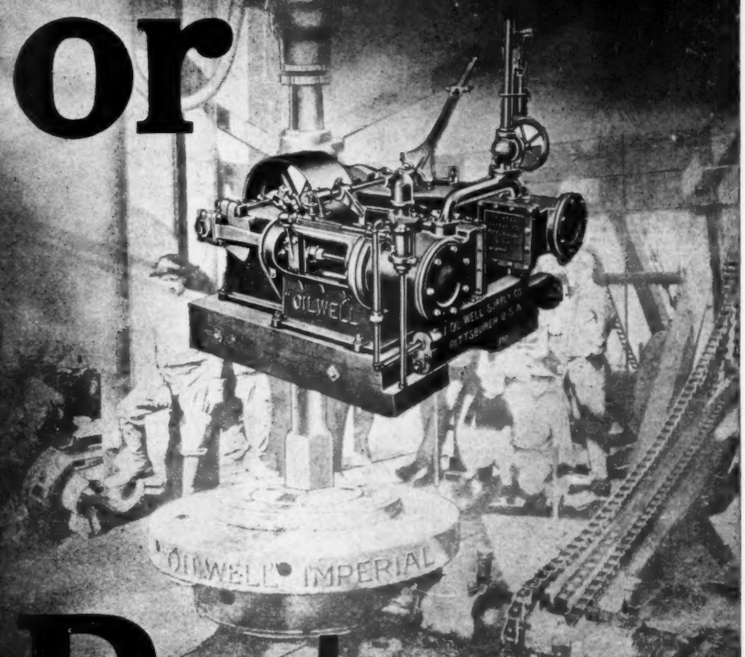
This outboard bearing is carried by an arm rigidly attached to the bed, and the arm is of such design and strength as to always hold the outboard bearing in line with the two main bearings, thereby distributing an equal pressure to each of the three bearings.

The construction of the outboard bearing is such that a belt, already clamped together, can be put on the engine pulley without removing any part of the bearing.

A special longer crankshaft is necessary to replace the regular crankshaft when the outboard bearing is used.

Described in detail in our Bulletin No. 54—get a copy at any of our 100 Branches.

or



"Oilwell" Twin Cylinder Steam Engines have been designed with the same care and attention to detail which has been responsible for the success of "Oilwell" Single Cylinder Steam Engines for so many years.

For Rotary Drilling, the Twin Engine has several advantages over the single cylinder type in that the Twin Engine cannot stop on center, and the absence of flywheel momentum facilitates quick starting, stopping, or reversing. It is also more sensitive, which is a great asset when making up pipe and, with it, a slower, positive motion can be obtained. *Bed plate, cross-head guides, and bearings for crank shaft are all cast in one piece.*

Each engine is given a running test before leaving the factory, and when shipped, is ready to perform the hard service for which it is designed.

For further information, send for Bulletin No. 49, or inquire at any of our 100 Branches.

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an extended trip to Eastern cities.

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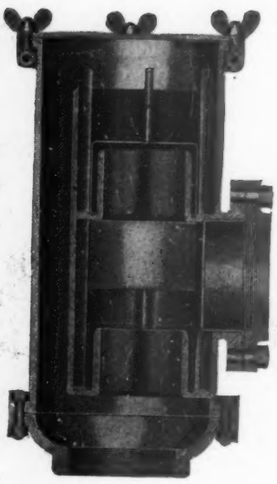
Tank Safety and conservation Equipment

representing many years of

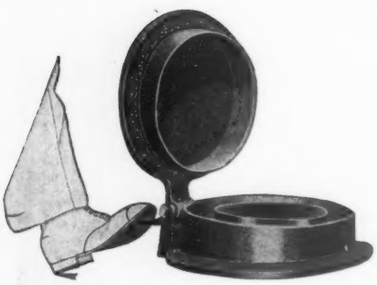
The acme of manufacturing achievement is exemplified in the constant



Liquid Safety Valve eliminates evaporation losses with absolute safety. Is not mechanical, will not stick or corrode and has no seats to grind. 100% safe —100% efficient.

Sheave Bracket. This cable guide is designed to deliver utmost working eficiency through its simple sturdy construction.

Thief Hole Device in Closed Position



Positive Thief Hole Device has two positive seats; one where the top fits over the lower section and another seat is provided by the immersion of the rim of the top into the liquid recess provided by lower walls.

The representative group of tank safety and conservation appliances pictured here embody the newest thought in tank equipment. Through their close applicability to modern methods they are rapidly taking the places of older, costlier and more cumbersome equipment. Tanks equipped with these safety and conservation devices give you maximum safety, and minimum loss—by fire, tank collapse or evaporation.

WESTCOTT & GREIS
Sales Service
TULSA DALLAS LOS ANGELES

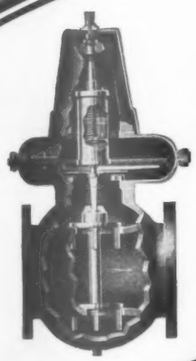
WESTCOTT & GREIS

and Valve Specialties—

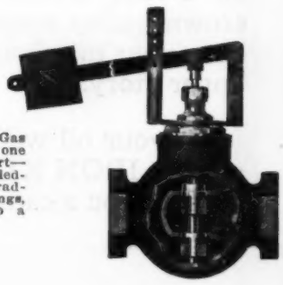
thought devoted to your needs

Valve equipment is as important a part of your tank equipment as are lungs to your body. And doctor bills are expensive, just as is valve maintenance. It will pay you to equip with Davis Valves, backed by over fifty years of experience in manufacturing the kind of "Valves that are off your mind when they are on your tanks."

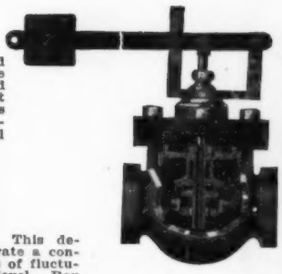
From the *Supersensitive Relief Valve,* for relieving at extremely low gas pressure, to the *fluid level controller,* Davis Valves, through their simple, rugged construction, will render exceptional, economical service.



Davis Supersensitive Relief Valve for relieving at extremely low gas pressure, also adaptable to closed storage tanks to prevent an accumulation. Operates noiselessly.

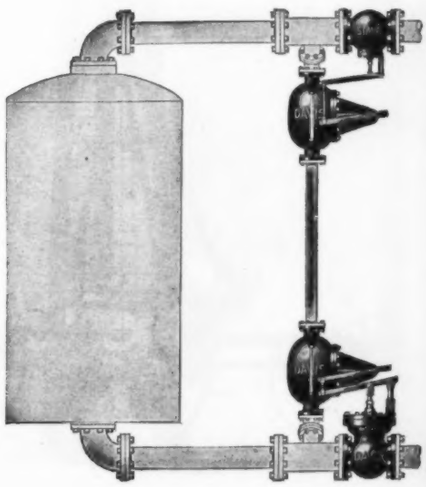


Davis Casinghead Gas Regulator has but one internal movable part—a balanced, beveled-seated disc with graduated port openings, coupled securely to a flexible diaphram.



Davis Balanced Valve has double parallel seats and piston disc. Use it for all purposes where an independently controlled valve is required.

Davis Float Box. This device is used to operate a control valve by means of fluctuation in the fluid level. Box contains an eight-inch seamless copper float attached by rod to the rotating stem that passes to the outside through a stuffing box. May be attached in any way that conditions demand.



labor that strives to make the good better, and the better, best

Manufactured by

G. M. DAVIS REGULATOR COMPANY

CHICAGO ILLINOIS

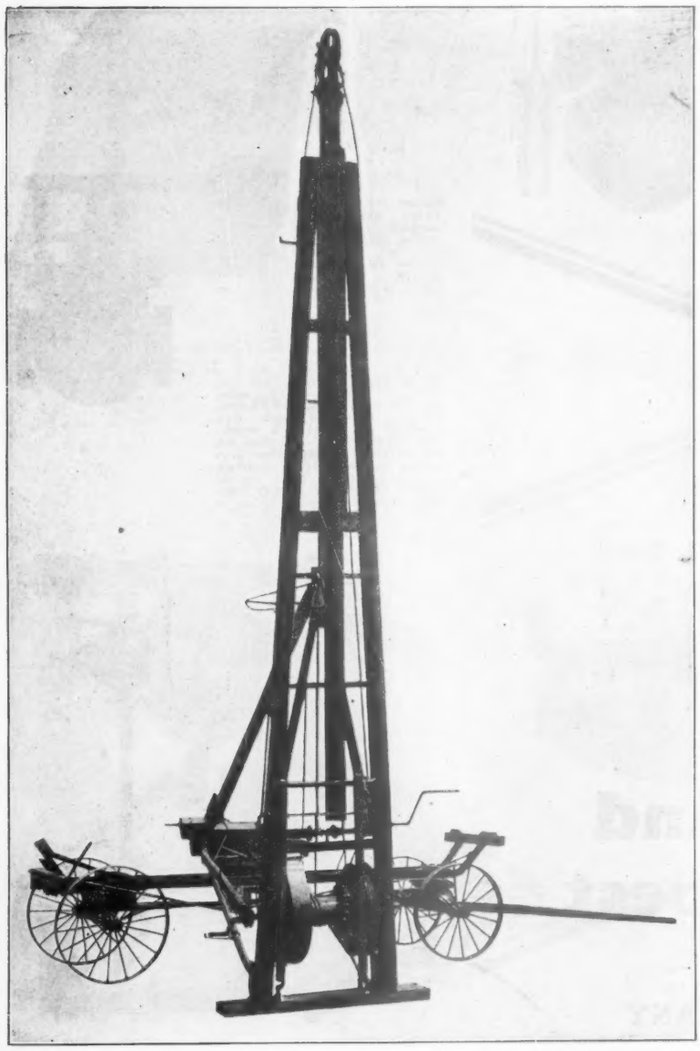
WESTGOTT & GREIS

OIL FIELD SPECIALTIES

Don't Rubber

Why stretch your neck every time you pull a rod to see that the tubing hook is not climbing the crown pulley? Why grow cross-eyed trying to watch both elevators? With an IRON KING pulling machine, whose crown pulley towers 40 feet above, you can keep your mind on your work and forget the upper story.

If your oil well supply store will not get you an IRON KING write us direct. Have we sent you a catalog?



The Iron King Manufacturing Co.
Bradner, Ohio

Say you saw it in The Oil and Gas Journal

LEWIS EMERY, JR., ONE OF THE OLD GUARD, PASSES AWAY AT 85

BRADFORD, Pa., Nov. 20.—Lewis Emery, Jr., capitalist, oil producer and refiner, and one of the most prominent of Pennsylvania oil men died last night in a hospital in Philadelphia where he had gone for medical treatment, which was followed by a delicate operation. Mr. Emery had been ill for several weeks and his death was not unexpected. He was 85 years old and was one of the last of the old guard oil men who started in the business when Pit Hole was the world's best known field.

Lewis Emery, Jr. was one of the outstanding figures in the history of the Eastern oil fields. No name was more familiar than his to Eastern oil men during a period extending from the late 60s until the day of his death and no career held more romance than the busy and sometimes stormy one which he lived.

Began at Pit Hole

Mr. Emery was born near Cherry Creek, N. Y., August 10, 1839. He finished his schooling in Hillsdale Academy, Hillsdale, Mich., and after a few years spent in the business of his father, who was a flour miller, he was attracted to the new Pennsylvania oil regions, arriving there when he was 27 years old. He located his first well at Pit Hole and thereafter for seven years was one of the active producers in the various new pools in the neighborhood of Oil City and Titusville.

Mr. Emery was well on the road to wealth when the Jay Cooke failure and the resultant panic—the historic panic of '73—caught him and financially ruined him, leaving him with a debt said to have been nearly $100,000 and no assets but his own dominant personality and the confidence of his fellow man. He was attracted to the possibilities of oil around Bradford, in McKean County, which had been prospected for year by men who had learned little about the oil business. He went to that place in 1874, and without a cent of money succeeding in leasing 14,000 acres and in obtaining credit from the firm of Eaton, Cole & Burnham, afterward the Oil Well Supply Co., for the material for a test. His first well was a producer and opened up the large territory south of the town of Bradford. It was not long before he had wiped out the results of the Cooke failure and in less than five years was known as a millionaire and had become the biggest single figure in the Bradford Field. He organized several oil companies, all of them with a very limited number of stockholders and which are still doing business after 45 years of existence.

Wide Interests

Mr. Emery built a refinery in Bradford, and a pipe line into the field. The refinery is now one of the most modern in its equipment of any in the East and turns out a complete line of petroleum products. He was one of the organizers of the Pure Oil Co., the United States Pipe Line Co., which conveyed kerosene from the Bradford Field to Marcus Hook, Pa., the Matson Oil Co., which was a large operator in the Oklahoma Field and which later sold all its Oklahoma holdings for $1,500,000. Mr. Emery also was one of the original owners of the Caney River Gas Co. and the Cortez Oil Co., prosperous companies in the earlier days of the Oklahoma fields, which later he and his associates disposed of profitably. At the time of his death Mr. Emery and his sons were producing and drilling in several Oklahoma pools. Deceased was interested in one time or another in all of the important fields of the East, particularly in West Virginia and Illinois.

In addition to his widespread oil activities, Mr. Emery engaged in farming and milling in the Northwest, in the manufacture of oxalic and lactic acids, in gold mining in Peru and in successful mercantile ventures. He was rated as a multimillionaire.

Mr. Emery took an active part in the politics of Pennsylvania for many years. He was elected to the Assembly in 1878 and to the State Senate in 1880. Pennsylvania, at that time, was ruled with an iron hand by the Cameron crowd of politicians as it was later dominated by Senators Quay and Penrose, and throughout his active political career, Emery was a thorn in the side of these Republican leaders. He refused to be bossed by anyone. His own dominating character was such that it would not tolerate dictation if it ran cross current to his ideas of what was right in the conduct of public affairs. He bolted his party in 1890 and assisted in the election of Robert E. Pattison, democratic candidate for Governor. He remained in the Senate two terms.

In 1898 State Senator Emery and Congressman Joseph C. Sibley, of Franklin, staged their celebrated race for Congress, one of the most exciting and closely contested campaigns in the history of Pennsylvania politics. Congressman Sibley was reelected. In 1906 Mr. Emery was nominated for Governor on the Democratic and Lincoln Republican ticket but was unable to overcome the tremendous Republican majority and was defeated by Edwin A. Stuart, Republican candidate, by a greatly reduced plurality. This ended his active political career.

Lewis Emery, Jr.

Always a Student

Mr. Emery had traveled extensively in many lands and covering a period of many years. He visited most of the oil fields of the world studying the methods of producing and refining.

He was a close observer and a keen and intelligent questioner and in his wide range of travel accumulated a vast store of information which he turned to account in his business affairs. He was a collector of curios to some extent and his museum in Bradford, filled with objects gathered from all over the world, was one of the show places of the city.

Mr. Emery's hospitality was proverbial. His beautiful home in Bradford was the scene of many brilliant social gatherings and in it he entertained many notable men, both American and European. He was generous in his charities and public spirited at all times.

Mr. Emery is survived by his widow, one daughter, Miss Grace Emery, and two sons, Earl C. and Lewis Emery, the two latter having been in charge of the vast Emery interests since their father cast off some of the burdens of his widely scattered interests.

The funeral will be held at 2 o'clock Saturday afternoon in Bradford and the burial will be in the Emery mausoleum in Oak Hill Cemetery.

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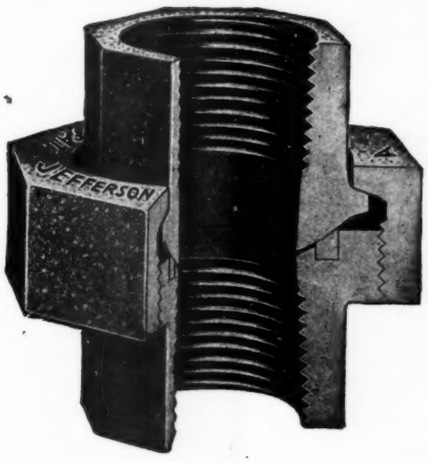
UNIONS and FLANGES

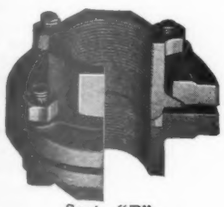
Save Time—Labor—Money

Look for name on the nut



Note location of brass seat ring

JEFFERSON Unions and Flanges are, without doubt, time, labor and money savers, and once you use a Jefferson you will be convinced of the high grade of material and the excellent workmanship that are put in these unions and flanges. All Jefferson Unions and Flanges are made of high-grade, air-refined, malleable iron, carefully inspected and properly tested, with a ground ball, brass-to-iron joint which cannot corrode, no gasket being required. The brass seat ring is located in a recess away from the runway of the fitting. This location prevents the ring from being loosened by the difference in the expansion and contraction of the iron and brass, and also from being dislodged no matter how far the pipe may be screwed into the fitting.



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139

"Look't that mitt"

"Ain't she a dandy?" inquires "Interstate Joe," displaying a right hand, covered with blood, on which four knuckles had been barked to the bone.

"Why, good gracious, Mr. McCoy, how in the world did that ever happen?" sympathizes the timekeeper.

"That didn't happen a'-tall," drawls Joe, sarcastic like,—"It was caused. Some people think the only thing important about tongs is to know where to get them the cheapest. When such people buy bastard tongs for a heavy job like this, the best thing us boys kin do is to keep our hands in our pockets.

"You see, Dick and me was on a pair of 8". We were on the last half turn—we came down on them tongs with all we had. But they didn't ketch.

"I heard Dick's teeth clatter as his knuckles buried themselves in the soft mud. But my knuckles didn't bury themselves a'tall, although they tried to,--in a big dornick.

"I'll tell the cock-eyed world them cheap, mongrel tongs 'barked up the wrong tree' this time. I'll carry water before I'll handle any other than

TRANSIT RED HEAD TONGS

National Transit Pump & Machine Co.
OIL CITY, PA.

District Offices:
New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

EARLY DAYS IN BURBANK RECALLED BY INSPECTOR

(Continued from Page 32)

limestone surface was cut into innumerable gulleys and draws that you only found by contact.

I remember my first trip to this well when they were rigging up. I had a Dodge car. I got within sight of the derrick many times that afternoon, but I never got to it. I got tangled up in draws and washouts and had to return to Pawhuska because of approaching night. The following day I carried my dinner and a canteen of water and I got to the well. I asked the men how they had brought the material in and they replied that it had been hauled from the west, from Ponca City, which accounted for the fact that I could not pick up the trail on my first visit of the previous day. From this location I could see another derrick possibly 6 or 8 miles farther west and knowing that the men had come from that direction I question them relative to the drilling conditions of this well, stating that they no doubt had seen it on their journeys back and forth. They assured me that they had seen the derrick, but had never been to it and volunteered the information that a man could see to a point in one minute that he could not get to in two days. I had to admit from experience, that there was a measure of truth in the remark.

This well is still producing at the rate of 25 bbls. daily. The second oil well to be drilled, was completed by the Carter Oil Co. July 14, 1920. This well was located in the NW quarter of Section 9-26-6. The initial production was not great because of gas, the use of mud in the hole and trouble in setting the pipe. However, these two wells, some three miles apart, were the two pioneer oil wells of the Burbank Field. They demonstrated that oil was there and at about what depth it could be found. From then on the drilling of each producing well increased the measure of confidence. Public sales of additional prospective oil leases in quarter section units, were held as the occasion required, usually in correspondence with the development of adjacent areas. In all, 15 such sales have held in Pawhuska. At this point I might add that the Osage Reservation is composed of approximately 1,500,000 acres and that while the surface of the lands may be held individually by the members of the Osage Tribe or their assigns, the mineral rights are held in common to the Tribe and the proceeds of the mineral development, after deducting expenses of administration and gross production taxes, are divided pro rata among the 2,229 head rights of the original allotment. These sales, comprising 120 quarter sections have brought a bonus price to the Osage Tribe of over $53,000,000. In other words, the oil men, experienced operators and the best in the world today, have paid a cash bonus of over $2,760 per acre for the privilege of exploiting the underground oleaginous wealth.

This is no mirage, it is no South Sea bubble. It is right in our dooryard. There has never been a fly-by-night company gained an inch of ground or a single letter gone through the United States mail whereby the faintest breath of suspicion could be directed toward any questionable stock promotion scheme.

Twenty-one quarter sections of the Burbank Field have sold beyond the million dollar mark, one, the NW of Section 14-27-5, bringing a bonus price of $1,990,000, or $753 a front foot, if you please, counting any side that you wish as located on Main Street.

All sales of mineral leases are conducted in the manner of any public auction. A schedule of offerings is prepared and distributed several weeks in advance. All legitimate, relevant, material information and data held by the department, such as logs and records, is an open book to prospective bidders. Most oil men, however, depend largely on personal and private sources of information, geological and otherwise. Bids are announced in the open and with a clear voice, in amounts from $100 to $50,000 or $500,000 at a clip, depending on the bidders' viewpoint.

Thomas A. O'Donnell, president of the American Petroleum Institute, in making a short impromptu address to the bidders during a few minutes' intermission at one of the sales some few years ago remarked in substance: "I want to say to you, gentlemen, that I have been an interested listener to the bids you have made. I have heard you mention in a casual way sums of money that astonish me. I feel that you must have the best geologists in the world and that you have unbounded confidence in their ability and judgment or else you are the greatest bunch of gamblers I have ever met.

In addition to the bonus, the oil producer pays a stipulated royalty of 1/5 or 1/6 of the gross sales, this difference depending on whether the well or wells of a given quarter section average more or less than 100 bbls. per day, through a 30-day average.

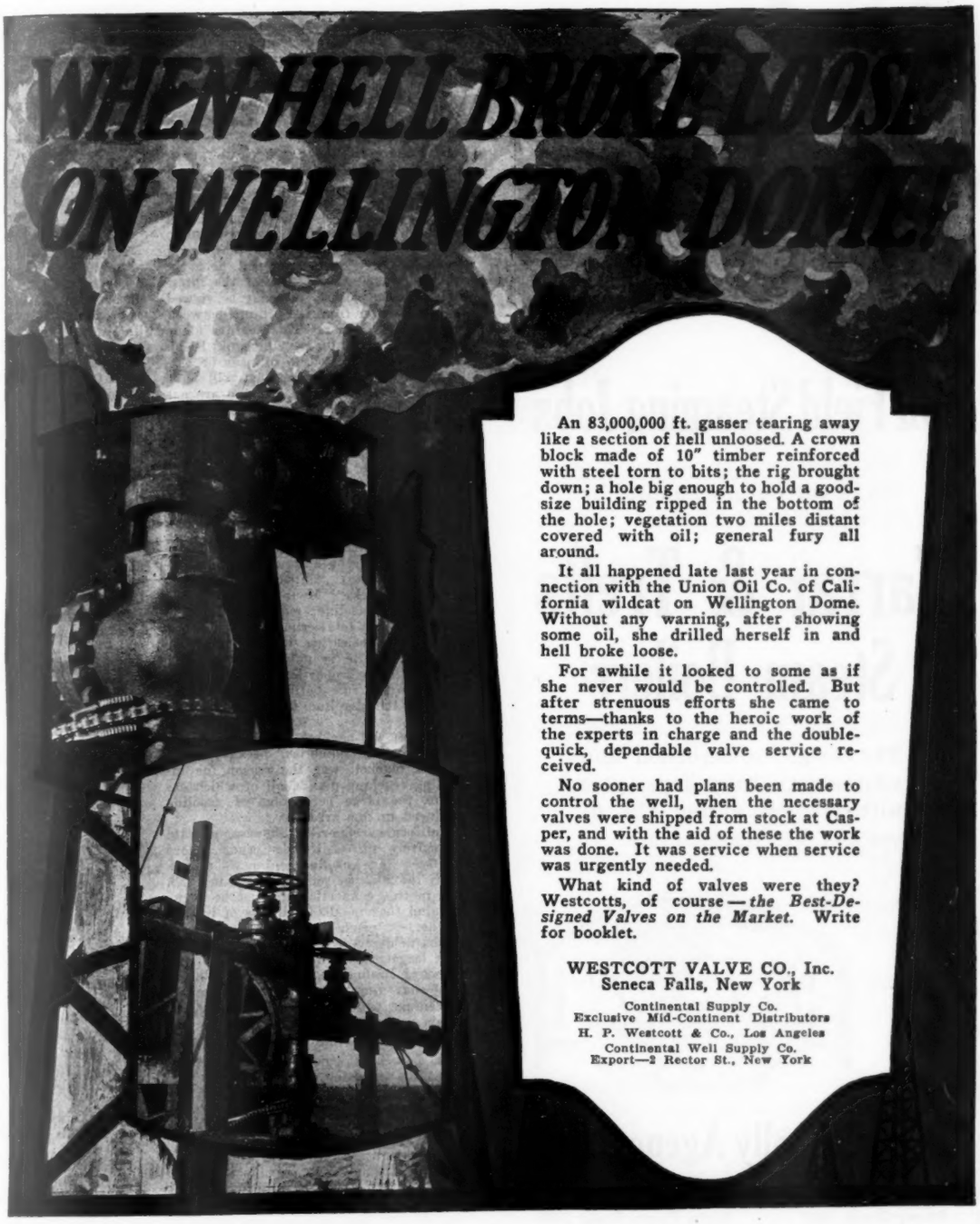
In all 1,371 oil wells had been completed in the Osage part of the Burbank Field at the close of August 1924, from which had been produced a gross amount of over 70,000,000 bbls. All of the wells are still producing and as to the ultimate recovery, your guess is as good as mine. In addition to the producing wells there have been drilled and abandoned as non-paying, only 12 holes. This record is remarkable. Considering the area and the number of wells, I do not know of a single field where it is equaled.

These wells have produced to and including August 1924 a gross amount of over 70,000,000 bbls. of oil from which there has been collected a royalty amounting to over 12,000,000 bbls., with a money value of over $23,000,000, which amount, plus the bonus of over $53,000,000, represents an aggregate of over $76,000,000 to the credit of the Osage Tribe in approximately 4½ years, or at the rate of over $16,500,000 per year. What did you say that the Jefferson administration paid for the Louisiana Territory in 1803? $15,000,000, was it not? Horace Greeley was not the only party who should have said "Go west, young man, and grow up with the country!"

Bear in mind that I am referring only to the Burbank Field in Osage County. Assuming that each drilled well with the lease equipment represents an expenditure of $30,000 and this estimate may be altogether too low, we have a physical outlay of $41,130,000, which with the bonus of $53,000,000 indicates a total investment in the oil game of $94,130,000. This may seem to you just figures. Well let's see, how many of you are making $25 to $50 a day? Suppose Nero could have acquired an annuity from the Roman Empire of $100 per day and suppose Nero could have lived up to the present time and could have collected and saved every cent of that $100 per day. He would still have to hock his famous fiddle for $26,000,000 to take up the oil investment of the Burbank Field.

In addition to this, there are 12 gasoline plants. Some of the most complete and up-to-date plants in the world, that are engaged in the manufacture of gasoline from casinghead gas, are to be found here. It is my understanding that one of these plants represents over $1,500,000 of invested capital and has some 70 miles of 8 and 10-inch pipe buried in the ground. Casinghead gas is a gas usually in small quantities, coming with the oil and from an oil producing sand. Up to a few years ago it was waste. It was allowed to blow into the air. You could not shut it in, to pipe any distance, because the accumulated pressure held back the oil and the well would stop producing. At this time in the Burbank Field alone, each day's production of such gas that is saved to help move the wheels of progress amounts to 110,000,000 feet. The combined gasoline output of these plants amounts to approximately 225,000 gallons per day or, enough gasoline is made each day in the Burbank Field to run a tin lizzie 180 times around the earth.

Not all gas is converted into gasoline and there is a residue or remainder of dry gas from these plants that is available for commercial purposes amounting to



An 83,000,000 ft. gasser tearing away like a section of hell unloosed. A crown block made of 10" timber reinforced with steel torn to bits; the rig brought down; a hole big enough to hold a good-size building ripped in the bottom of the hole; vegetation two miles distant covered with oil; general fury all around.

It all happened late last year in connection with the Union Oil Co. of California wildcat on Wellington Dome. Without any warning, after showing some oil, she drilled herself in and hell broke loose.

For awhile it looked to some as if she never would be controlled. But after strenuous efforts she came to terms—thanks to the heroic work of the experts in charge and the double-quick, dependable valve service received.

No sooner had plans been made to control the well, when the necessary valves were shipped from stock at Casper, and with the aid of these the work was done. It was service when service was urgently needed.

What kind of valves were they? Westcotts, of course—*the Best-Designed Valves on the Market.* Write for booklet.

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Exclusive Mid-Continent Distributors
H. P. Westcott & Co., Los Angeles
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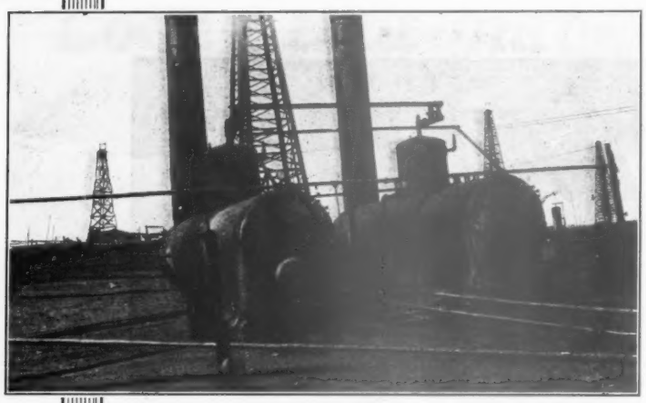

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Louisiana, Arkansas and Houston, Texas—Petroleum Supply Co.

80,000,000 feet per day. A royalty is derived to the Osage Tribe from both the gas and gasoline.

The Burbank development has spread northwestward from Osage County into Kay County where there are 190 producing oil wells with a daily production of 14,000 bbls. The Kay County part of the field is in what is termed commercial area. The oil royalties are individualized or credited as indicated by the surface ownership. However, for certain statistical or capacity purposes, this is also a part of the Burbank Pool.

Two railroads and six towns have thrown their hat into the ring. The Midland Valley and the Santa Fe are both doing a good business. Whiz Bang, Webb City, Shidler, Cooper, Lyman and Empire City have sprung up with the gassy vapors and settled into a substantial reality. These places have stores, banks, newspapers and schoolhouses that are a credit to any town. Few oil fields in which I have worked present the interesting scenic picture that may be viewed by the observer from the hilltops between Lyman and Cooper. This feature alone is worth a trip to the Burbank Field. If you are interested in oil, gas or balloons, make the trip and you will have passed a well spent day. If you are not interested in anything, make the trip and you will at least know you have been somewhere when you get home that night.

GASOLINE SUPREMACY OF THE MID-CONTINENT

(Continued on Page 21)

it is obvious that the crude oil used can be counted only once—and as it was impossible for any "outside" oil to get to the Rocky Mountain refineries the total gasoline made should be credited to the total crude run. Equipped as these refineries are with large cracking capacity, it is apparent that they crack a large proportion of their stock after straight run distillation has recovered all the gasoline that fractionation will give.

In fact, the backing up of fuel oil in the Wyoming refineries, because of a lack of market, was the reason for installing cracking plants, all of which explains the large percentage of gasoline produced in this area.

California refineries, likewise, operate exclusively on California crude whose relatively low gasoline content is reflected by the 20.2 per cent recovered in 1923. But in this connection it must be borne in mind that in 1923 millions of barrels of the best crude from the Los Angeles Basin fields were tankered out of that area largely to Gulf Coast and Atlantic seaboard refineries, thereby reducing somewhat the figures for the average percentage which the crude oils of California really contained in 1923.

Gasoline Content

In drawing a general conclusion about the actual gasoline content of the crude oil produced in different areas of the United States, both the inherent differences in gasoline content of different crudes and the substantial addition from cracking, must be borne in mind. With this background it is possible to set up a set of figures which, while concededly not entirely accurate, are nearly enough correct to illustrate the essential conditions involved.

Turning to Table 2 it will be noted that in 1923 our refineries ran 592,000,000 bbls. to stills of which about 49,000,000 bbls. were foreign oil. Deducting the foreign oil leaves 543,000,000 bbls. of domestic oil run to stills.

The total 1923 output of gasoline from refineries was 179,903,000 bbls. Conceding that the foreign oil produced 10 per cent gasoline, which would be more than liberal, leaves 175,000,000 bbls. of gasoline produced from domestic crude, or a gasoline recovery of 32 per cent.

Starting with these two figures which are approximately correct—543,000,000 bbls. of oil and 175,000,000 bbls. of gasoline—we find that 732,407,000 bbls. of crude were produced last year, of which the Eastern area produced 40,000,000 bbls., the Mid-Continent 348,000,000 bbls., the Gulf Coast 33,000,000 bbls., the Rocky Mountain area 47,000,000 bbls. and California 263,000,000 bbls.

The percentages used in the column, "Estimated Gasoline Content," while arbitrary, are probably not far from the percentages actually recovered. We know, for instance, that the Kansas-Oklahoma refineries obtained over 40 per cent gasoline in 1923—that the Rocky Mountain refineries recovered 45 per cent and that the California refineries recovered 20 per cent. The refineries in these three areas operated exclusively on their own crudes hence these percentages have been used in the estimate. Certainly all of the crude produced in the Gulf Coast, checked against the gasoline recovered would not give an average of over 10 per cent—and we will concede that the oil produced east of the Mississippi produced 40 per cent gasoline.

Output by Areas

Applying these percentages to the crude oil actually produced in these different areas in 1923, we find that the oil produced east of the Mississippi contained approximately 16,000,000 bbls. of gasoline—that the oil produced in the Mid-Continent contained about 139,000,000 bbls.—the oil in the Gulf Coast over 3,000,000 bbls.—the oil in the Rocky Mountains over 21,000,000 bbls.—and the oil produced in California over 52,000,000 bbls—a grand total of over 232,000,000 bbls.

The final figures for 1923 from the Bureau of Mines show that the domestic oil run to stills yielded about 32 per cent gasoline, or a total of about 175,000,000 bbls. of gasoline from about 543,000,000 bbls. of domestic crude.

On the same basis the 732,000,000 bbls. of crude actually produced in 1923 would have produced 232,000,000 bbls. of gasoline if it had been run to stills—and will produce about that much gasoline whenever and wherever it is run.

Of this total amount of gasoline—232,000,000 bbls.—the oil from the Mid-Continent contained approximately 139,000,000 bbls. or 60 per cent of the gasoline in all of the oil produced in the United States.

It is interesting to note, in connection with Table 2, that while the crude oil produced east of the Mississippi contained probably 16,000,000 bbls. of gasoline, the oil actually refined east of the Mississippi produced 65,000,000 bbls. of gasoline. Also that while the area east of the Mississippi produced 40,000,000 bbls. of crude oil last year, its refineries run nearly 195,000,000 bbls. through their stills.

The Mid-Continent, including the Gulf Coast, produced over 381,000,000 bbls. of crude oil in 1923. It contained over 140,000,000 bbls. of gasoline. The refineries in this area ran 219,000,000 bbls. and made 69,000,000 bbls. of gasoline.

Rocky Mountain Area

The Rocky Mountain area produced over 47,000,000 bbls. of crude from which at least 45 per cent gasoline, or over 21,000,000 bbls., was recoverable. Including all oils run to stills, almost 34,000,000 bbls., the gasoline output, 15,000,000 bbls., amounted to nearly 45 per cent.

California produced about 263,000,000 bbls. of oil in 1923 containing over 52,000,000 bbls. of gasoline. During the year her refineries ran 151,000,000 bbls. and produced 30,000,000 bbls. of gasoline.

Taking the United States as a whole, the area east of the Mississippi produced crude oil containing about 7 per cent of the total gasoline procurable from the total crude produced.

The Mid-Continent produced crude from which at least 60 per cent of the total gasoline was produced.

The Gulf Coast crude furnished about 1½ per cent—the Rocky Mountain area about 9 per cent and California crude about 22½ per cent.

Mid-Continent Leads

In the final analysis, as the major function of the oil industry is to produce gasoline, it is obvious that from the standpoint of producing crude oil from which gasoline is obtained, the Mid-Continent outranks California almost 3 to 1. It outranks the area east of the Mississippi almost 9 to 1. It outranks

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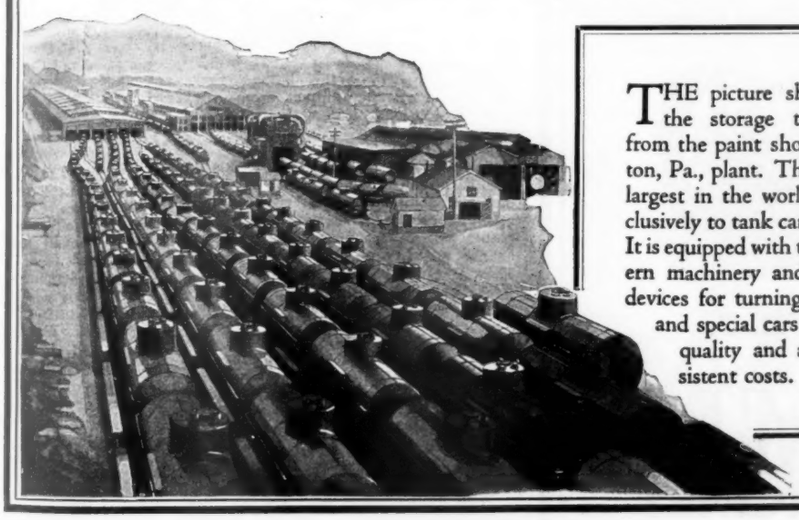
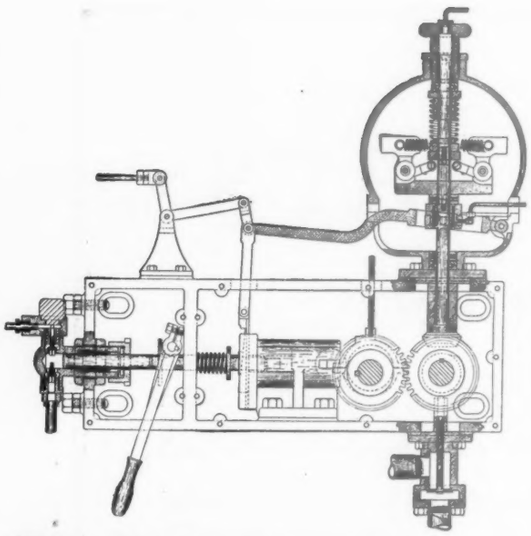


THE picture shows some of the storage tracks leading from the paint shop at our Milton, Pa., plant. This plant is the largest in the world devoted exclusively to tank car manufacture. It is equipped with the most modern machinery and labor-saving devices for turning out standard and special cars of unequalled quality and at lowest consistent costs.



The Governor and Fuel Injection Pump of the New SBU "Primm"

The drawing shows the new Governor, Fuel Injection Pump and operating mechanism of the new Type SBU "PRIMM" Oil Engine. All parts operate in a bath of oil — reducing wear and noise to a minimum.

This new design lowers the fuel consumption to a point never before reached in a Low Compression Semi-Diesel Engine. Full information on request.

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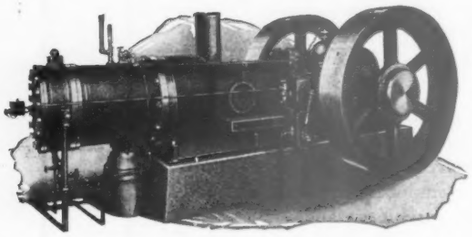


20 H. P. to 300 H. P.

PRIMM OIL ENGINES

the Gulf Coast 40 to 1—the Rocky Mountain area almost 7 to 1.

In comparing Table 3 with Table 1 it is interesting to note that in the first nine months of 1924 the East Coast produced 27.8 per cent gasoline compared with 27.4 for the year 1923—that the Pennsylvania area refineries produced 36.1 per cent compared with 35.0 in 1923—that the Illinois area refineries produced 46.4 compared with 46.7 per cent in 1923.

In the Mid-Continent area the Oklahoma-Kansas refineries produced 42.9 per cent gasoline in the first nine months of 1924 compared with 41.7 per cent during the year 1923—the Texas refineries (which includes the Texas Gulf Coast) produced 31.5 per cent compared with 27.5 per cent, while the Louisiana-Arkansas refineries (which includes the big refineries from Baton Rouge south on the Mississippi) produced 23.8 per cent compared with 24.7 per cent in 1923. The change in percentages is due in large measure to the different proportions of California, Mexican and Mid-Continent crudes handled in the first nine months of this year compared with the year 1923. The proportion of light oil produced in Mexico is decreasing, while the proportion of heavy oil is increasing and this gradual change is being offset in both the Gulf Coast and the Atlantic seaboard refineries by running increasing amounts of Mid-Continent crude.

Run More Mid-Continent

The increase of 4 per cent in Texas the first nine months of 1924 is very largely due to running a larger proportion of Mid-Continent crude.

In the Rocky Mountain area the refineries in the first nine months of 1924 produced 45.5 per cent gasoline which checks closely with the 45 per cent produced in 1923, the 54.4 per cent appearing in Table 1 not having taken into account the "unfinished oils' 'as previously explained.

In the first nine months of 1924 California refineries ran 115,000,000 bbls. and produced 24,000,000 bbls. of gasoline compared with 151,000,000 bbls. run to stills in 1923 and producing 30,000,000 bbls. of gasoline. The percentage for the first nine months of 1924 (21.2) is a slight increase over the gasoline recovered in 1923 (20.2).

With the rapid increase in the installation of cracking units the gasoline content of the crude as it comes from the ground will gradually become less important so far as the total amount of gasoline possible to be obtained from crude oil is concerned.

Content Less Important

In a broad general way the gasoline content of crude oil should be the most potent among the several factors in determining the price of crude—but even this fact, obvious as it is, is rapidly losing its importance through the cracking of low gasoline content crudes and even "gasolineless" crudes that were formerly considered useable only for fuel oil.

And any table of percentages made on the basis of present quantitative and qualitative production of crude oil plus cracking plants and natural gasoline plants will slowly and constantly change as the quantity of oil produced in the several areas changes—as the quality changes—as the proportion of cracked oils increases and the amount of natural gasoline increases.

The problem is one of "complex variables" with practically none of the factors constant. But of this we may be certain, that the cracking plant is rapidly putting us in a position wherein we need have less concern over the "gasoline content" of either new or old fields, even though the fractionating process is essentially cheaper than cracking.

With flush fields of high gravity crude our refineries can take the path of least resistance—but if and when the time comes that there are substantial declines in the barrelage production of the United States, then the cracking plant will really come into its own.

However, in 1923 the Mid-Continent produced over 47 per cent of the crude oil of the United States—and it contained 60 per cent of the gasoline that all of the crude produced in the United States contained.

Situation Today

In November 1924 the Mid-Continent is producing over 52 per cent of the crude oil of the United States—and it contains at least 65 per cent of the gasoline that all of the crude produced today in the United States contains.

From a "gasoline content" standpoint the flood of crude from Mexico a few years ago was much less disturbing than the flood from California last year.

But the proportion of high graity crude from Mexico is rapidly decreasing and there is every indication that in the near future California oil will practically cease passing through the Panama Canal.

And out of it all the Mid-Continent will emerge with around 50 per cent of the crude production of the United States—and out of this crude will be made well over 60 per cent of the gasoline of the United States—regardless of where it is refined.

EAST CENTRAL TEXAS PRODUCTION FALLING

CORSICANA, Tex., Nov. 22.—The average daily production of East Central Texas pools for the week ending November 18 was as follows: Mexia, 22,120 bbls. from 468 wells; Powell, 68,933 bbls. from 764 wells; Currie, 3,200 bbls. from 75 wells; Richland, 19,138 bbls. from 86 wells.

The week was uneventful and very little activity is being shown in field work. The production of the field has taken a material drop of late, the total of 113,491 bbls., last week's daily average comparing unfavorably with the total of 125,038 bbls. which was the average daily production for the month of October.

In Navarro County, E. L. Smith abandoned No. 1-A Cerf, Smith survey, Powell district, at 2,020 feet, having found no sand. Elliott & Nicolle have a derrick up for No. 1 Westbrook, Horn survey, a wildcat location. The Pure Oil Co. has derrick up for No. 5 English, Boren survey, Currie district. The J. K. Hughes Oil Co. has a derrick up for No. 4 Murray, Currie survey, Currie district. In the Richland area, the Boyd Oil Co. abandoned its No. 1 Allison, White survey, at 3,007 feet. The Atlantic Oil Producing Co.'s No. 7 Swink, Choate survey, had an initial production of 600 bbls., 50 per cent water, from sand at 2,935-39 feet. The Sun Oil Co. finished a 13,000,000-foot gasser in No. 1 Swink, Boren survey at 2,977-82 feet.

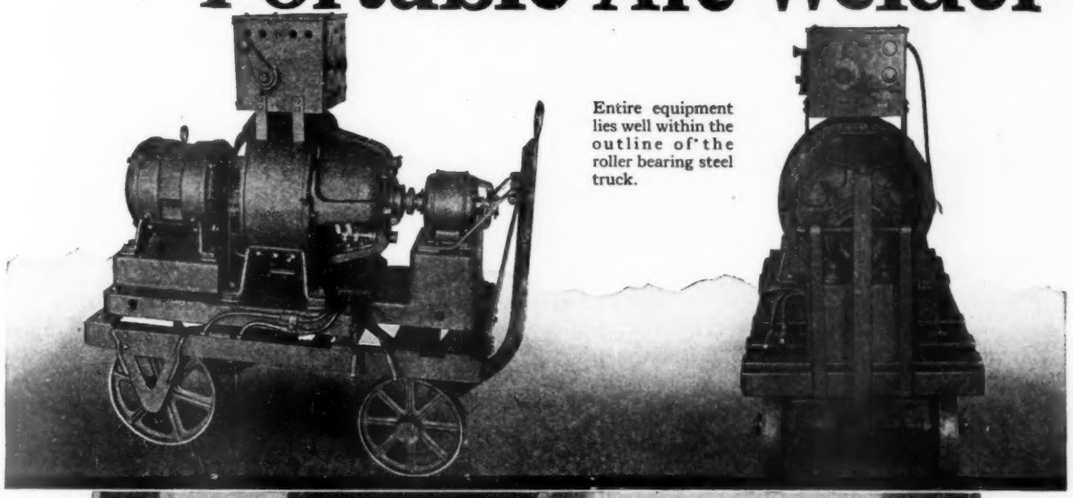
In Freestone County, McDonald Brothers have derrick up for a test on the Mrs. McClelland farm, Ritchie survey and Penn and others have derrick up for No. 1 McCarkle, Longbotham survey. The Boyd Oil Co. is shut down for orders in sand at 2,903 feet in No. 1 Simmons, Longbotham survey; John Hoosier was drilling at 2,572 feet in No. 1 Stubbs, Longbotham survey; Carter & Lytell were below 850 feet in a new hole on the Monning farm, McNulty survey. They lost the first hole at 1,681 feet.

In Milam County, Lee Dodwell and others have made a location for a test on the Forkell farm, Perry survey; Sinclair Oil & Gas Co. were drilling below 1,430 feet in No. 1 Smith, Moore survey; The Beverly Oil Co. was drilling below 1,520 feet in No. 2 Buer, Shields survey; Garland F. Fallis was drilling at 1,460 feet in No. 1 Holliman, Hill survey.

TRUCK SERVICE RECORDS

CLEVELAND, Ohio, Nov. 22.—Utilization of service records for the advancement of the motor truck industry was one of the major points stressed at the joint service convention of the National Automobile Chamber of Commerce and the Society of Automotive Engineers, held here. The convention was attended by chief engineers, representing the S. A. E. and service managers, delegates to the N. A. C. C., from virtually every automotive manufacturer in the country. S. V. Norton, service manager of General Motors Truck Co., read a paper on "Utilizing Motor Truck Service Records."

The New Westinghouse Portable Arc Welder



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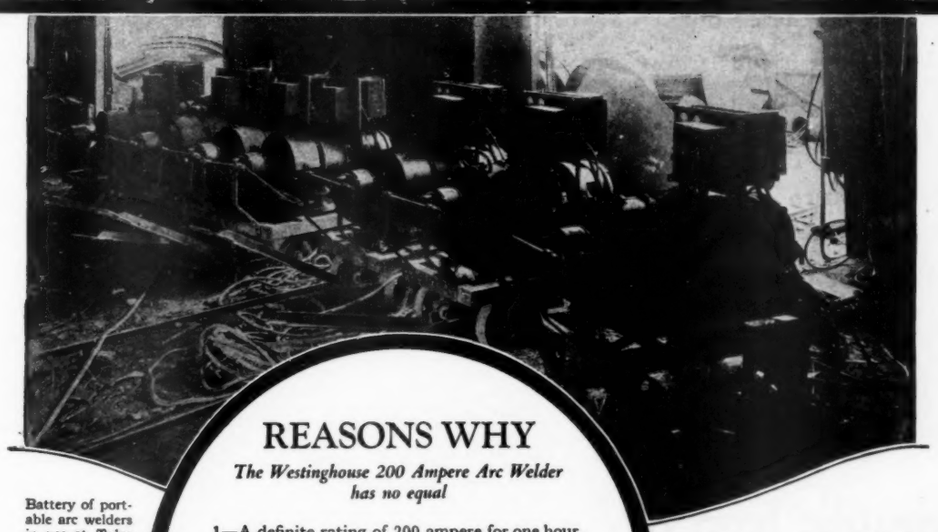

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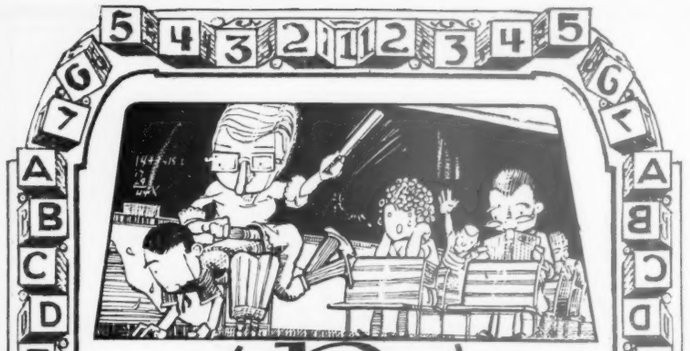

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REPUBLIC

OIL CONFIDENCE BEING RESTORED WITH GENERAL BUSINESS UPTURN

By L. M. Fanning

So far as the external influence of political interference is concerned, the petroleum industry, with election results pretty well defined, can now go forward with general business with renewed confidence. While leaders of the industry are not proclaiming it to the world, they are free to admit of optimistic sentiments regarding the broad aspects of the petroleum situation. The oil industry has been a target for radical elements in State and Federal circles and particularly in the last two years it has been singled out for attacks of every character. That this had a tangible effect on the operations as a whole is without question. Coupled with two years of overproduction the effect was the more disturbing, for adjustments necessitated in taking care of the economic situation were complicated by fear of antagonistic legislation. An industry so close to the public and serving it with essential products, is always more or less subject to attack, and the last election has by no means sounded the end of attacks of whatever character, but the decisive voice of the electorate has considerably lessened the possibility of drastic measures inimical to the progress of the industry under private operation and has successfully curbed a tendency that carried disturbing consequences for the oil business.

Defeat of La Follette

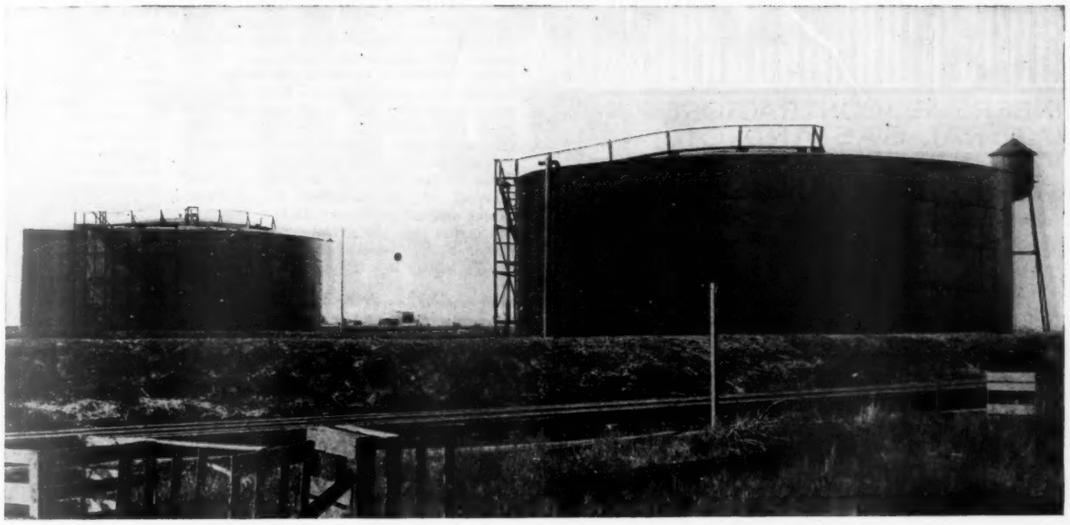
The decisive defeat of Senator La Follette, who has been most active in Washington in attacking the oil industry, has particular significance for members of the petroleum fraternity. Not only was the oil business picked out for revamping in the Third-Party platform, but Senator La Follette has had ready for introduction a bill for some kind of oil regulation or supervision which apparently escaped presentation in the last Congress because of the Senator's ill health. While the Third Party platform concerned itself particularly with matters pertaining to leasing of public oil lands, it also provided for what could be interpreted as public ownership and operation of petroleum. Many oil men who have been following political tendencies affecting business generally and petroleum in particular, have been frank to state that they felt alarm at the increasing evidence of the socialistic tendency. The inflamed state of the last Congress caused by the leasing exposure and the other investigation led some officials to predict that unless something effective were done to combat it, nationalization of oil would become not merely a useful threat but an actual fact in this country. Others believed that while nationalization could not possibly occur, a regulation of the industry extremely disturbing would be attempted if conditions progressed along the path already entered. Further complicating the situation so far as public understanding is concerned, have been conditions in the industry itself in its grappling with overproduction, and fear was expressed that the difficulties involved would bring about some Government action which in the long run would prove expensive to the industry.

No Oil Legislation?

As regards oil legislation in the short Congress convening next month it is believed extremely unlikely that Senator La Follette will present his petroleum bill. Moreover, even with the radical composition of that Congress undisturbed, it would be unlikely that any severe oil legislation could be passed. The situation as regards oil legislation, which probably never was as imminent as that respecting railroad and other legislation proposed by the La Follette forces, is similar to the legislative outlook for other measures advanced by the La Follette block. No legislation of radical turn is expected to have a chance. When the new Congress assembles in December of next year it will find La Follette and his forces no longer holding the balance of power. At any rate the outlook is for a surcease of congressional agitation against the oil business for a period of at least a year. President Coolidge has clearly indicated that business can go ahead without fear of disturbance by Congress as regards many measures which have held back logical business development. There is little possibility of the short session convening in December considering public land leasing legislation, but it will doubtless come up in the new Congress next year, depending upon what progress has been made with the lease trials. That further legislation respecting leasing of oil lands on the public domain will be provided is believed certain. This may be advanced before the time at present indicated should the President decide to act upon the forthcoming report of the investigation made of the subject by his oil conservation commission. This subject is, of course, apart from that respecting legislation proposing some kind of Federal control for the oil business. It is not thought that any pending investigation of the oil industry will produce any change in the legislative outlook. Recent advices from Washington indicate that the Department of Justice, which is still investigating the gasoline situation, has about completed its work. Attorney General Stone is quoted as stating that further legal action is unlikely, although this will depend upon the final report. It is apparent, therefore, that developments of the last few weeks have been equally favorable to the oil industry as to business generally and particularly as regards business formerly threatened with hostile legislation.

Keeping Public Informed

While the prospect of passing inimical oil legislation is remote, this does not mean that attempts will not be made to force various brands of legislation through. There has been no Congress for many years distinguished by the absence of oil bills of one kind or another. It is still necessary for the industry to watch its step and to keep the public fully informed. It has been pointed out by leaders in the industry that abnormal situations such as the industry has been going through lend themselves to lack of understanding by the public and that because of that misunderstanding the industry is faced with the possibility of unfair and unwise legislation if the public is allowed to assume that the industry has ignored conditions which should have been influential in straightening out its affairs. A. C. Bedford, chairman of the board of the Standard Oil Co. (New Jersey), at the last annual meeting of the American Petroleum Institute, speaking of political tendencies and of the industry's public relations said: "There are always certain political forces working towards Government control of industry though I fully believe that is the last thing the mass of the American people would deliberately choose," a statement somewhat borne out by the last election. "No large section of the American public wants any extension of Governmental control of business except as the lesser of evils," he said further. "The typical American citizen is pretty hard headed, though he may be given to temporary emotional extravagances of speech by way of letting off steam. He has a good head and a saving grace of common sense which tells him that he will be a little prouder of his country if he never again sees it engaged in shipping, railroad and telegraph or other private business. He does not want his Uncle Sam togged out in overalls going into the oil business. It is essential, however, that the petroleum industry should fully explain to the public what has taken place and what are the actual economic and business conditions of the industry, and the necessity of the industry having the greatest opportunity to respond to the normal operation of economic laws. It will be our own fault if we suffer from the public action because we have allowed critics, through ignorance or otherwise, to create the impression that there



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is something wrong with the industry, when as a matter of fact there is nothing whatever fundamentally wrong with it."

Upturn Wholesome for Oil

The upturn that is looked for in industry generally, if it materializes, will have its wholesome effect upon the demand for petroleum products. Prosperity indices of general character, affecting all business, which have brought about a general feeling of optimism are those connected with the clearing up of the reparations problem, the floating of the German loan, the triumph of the Conservative Party in England and the removal of the so-called La Follette threat against business. It is a foregone conclusion that the petroleum business in this country will share in any increased buying power by foreign countries. In fact, the expansion of the export business has been steady and surprisingly large this year, and it bids fair to be a considerable factor for stability in the industry. Greater industrial activity will be reflected in the demand for lubricating oil and fuel oil, and general prosperity will insure further expansion of the use of the automobile with resultant effect on gasoline sales. If business generally is in for an era of prosperity, the petroleum industry which due to unusual conditions of available supply of oil has gone through two of its hardest years, is in a fair position to have its share of the good times ahead.

CENTRAL WEST

(Continued from Page 54)

west quarter of Section 12, Lockhart Township, Pike County, and toward the southern end of the county. The well was dry at a depth of 1,385 feet.

Four completions were made in the Illinois fields during the week. three being fair producers and one dry hole. In Casey Township, Clark County, Boyd, Eaton and others' test 600 feet from the north line and 200 feet from the east line of the John Laigner farm, in the southwest quarter of Section 24, showed a flush of 35 bbls. from a depth of 486 feet. Gillette and others' No. 1, in the southeast corner of the William Reisinger farm, in the southeast quarter of Section 25, had a flush of 40 bbls. from a depth of 1,417 feet which is a stray sand for that township, similar to the stray found in the Martinsville Township area. These two wells may bring about a more active drilling campaign in the Casey Field.

To the north end of the old field, in Hutton Township, Coles County, out a few miles from Westfield, Colegrove and others' No. 18, located 1,500 feet from the north line and 200 feet from the west line of the William Roach farm, Section 7, pumped 15 bbls. from a depth of 625 feet.

In Martin Township, Crawford County, C. C. Curtis and others' test on the northwest corner of the Mary Walker farm, Section 29, was a duster.

EASTERN FIELDS

(Continued from Page 56)

drilling to the lower sands. In the same township, the Fox Oil Co.'s test on the W. G. Headley farm is a gasser in the 50-foot and Bayard sands. In Richhill Township, John Blair has a gasser in the Big Injun sand at No. 6 on the W. J. Bryan farm. In Center district, the Manufacturers Light & Heat Co.'s test on the Isaac Orndoff farm is dry in all sands. In Springhill Township, the Fox Hill Oil & Gas Co. has started to drill at a test on the Thomas R. Shook farm.

Deep Well Abandoned

Near Ligonier, on Chestnut Ridge, Westmoreland County, the Peoples Natural Gas Co. has at last abandoned its deep test on the Seger Brothers' farm. This well was drilled to a total depth of 6,985 feet. This was 163 feet deeper than the test on the Booth-Flinn property and 250 feet below where the gas should have been encountered. A crooked hole was the cause for abandonment. The same company's other deep well, a second deep test on the Booth-Flinn property, encountered a sand formation at a depth of 7,260 feet and is now drilling at 7,265 feet. The sand is close and hard.

SURVEY OF STATIONS SERVING INDIANAPOLIS

A survey of the growth of service stations in Marion County, Indiana, reported by the Indianapolis News, shows that in that city there is one gasoline service station or garage, exclusive of curb pumps, for every 216 motor customers. Seven of the larger oil companies were shown as operators of 162 service stations in the city, with 20 additional stations operated by the smaller concerns and individuals and approximately 175 garages selling gasoline. A conservative estimate showed 357 gasoline dispensing places compared to 66,510 automobiles and 10,632 trucks in the county acording to figures for the first half of 1924, making an average of 216 customers for every station or garage in the city.

The survey continues:

"Regarding the expansion of filling station systems in the city, records in the office of the city building commissioner show that 52 new stations have been erected in the last 12 months. Since records have been kept on new stations in the last three years, 150 have been built.

"The Standard Oil Co. (Indiana) has 58 service stations in operation in Indianapolis. The company erected 10 new stations in the last year and 16 the year before. The Indianapolis division of the company covers 38 counties of central Indiana. About 400 persons are employed, 129 of whom work in the service department. The company has three storage plants or bulk stations in the city, which have the combined capacity of 670,000 gallons of gasoline, and has a fleet of 56 trucks.

Next to the Standard Oil Co. the Western Oil Refining Co. has the largest number of filling stations in the city. Eleven new stations erected this year by the Western Oil Refining Co. has increased its total to 36. The company, which operates in Ohio and Indiana, has in all about 80 filling stations. It has a fleet of 20 trucks operating out of Indianapolis. J. H. Trimble, of Indianapolis, is president.

"The Sinclair Refining Co. operates 16 stations in the city, five of which have been erected in the last year. It operates a fleet of 12 trucks from Indianapolis headquarters. L. J. Drew is general manager of the Indianapolis branch.

The National Refining Co., operates 16 filling stations, six of which are new, and 12 trucks, in the city. D. W. Lamoreaux is division manager.

"The Pure Oil Co. operates 16 filling stations in the city, four of which have been built in the last year. The company's newest station will be opened in two weeks. W. E. Moorehead is branch manager.

SURVEY OF QUINTON FIELD

M'ALESTER, Okla., Nov. 22.—M. K. Read, Muskogee geologist, and Miller Hay, State conservation officer in this district have completed an exhaustive survey of the Qinton gas field, Mr. Read being employed by the city of McAlester for that purpose. McAlester has asked for a decrease in gas rates and facts for presentation at a hearing before the Corporation Commission were gathered by Mr. Read and Mr. Hay. The Quinton Field is on a structure said to be about 10 miles in width and 30 miles long, and is some 30 miles from McAlester. Producers in the field receive 6 cents per 1,000 feet for their gas, which the gas company delivers for use in McAlester. The field apparently has scarcely been scratched as present development shown on the map covers but a small portion of the area included in the structure.

NEW COTTON COUNTY WELL

WALTERS, Okla., Nov. 22.—The Clark-Cowden interests are drilling deeper in No. 1 Tettleton, northwest of the southwest of 9-1s-9w, following failure to exhaust water, which was showing with the gas. The test, which opened a new field in Cotton County, gauged 5,600,000 feet, and tested 630 pounds rock pressure.

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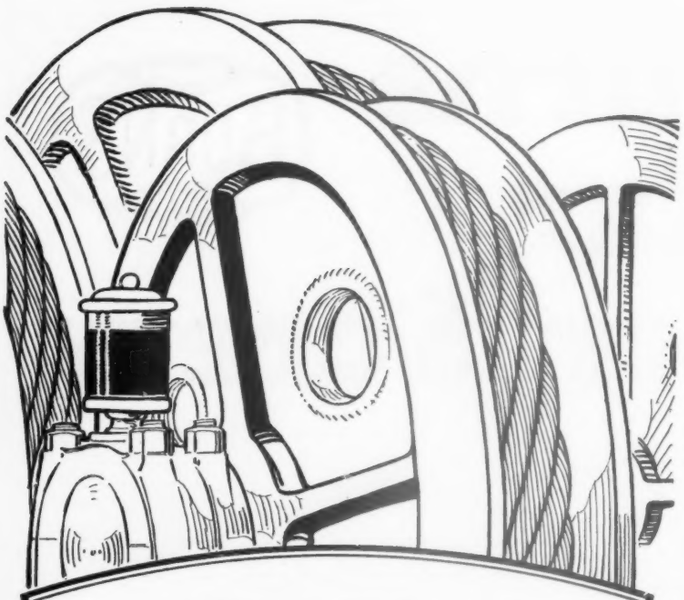

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ESTIMATE OF WORLD'S PRODUCTION INDICATES SMALL GAIN THIS YEAR

By Valentin R. Garfias
Manager Foreign Oil Department, Henry L. Doherty & Co.

The world's petroleum production in 1922 aggregated approximately 855,000,000 bbls., and the following year the total passed the billion mark reaching 1,004,000,000, an increase of 149,000,000 over the preceding year, this being due to the tremendous increase in the production of the United States which was 168,000,000 over that of the preceding year. In fact the increase in production in the United States accounted for the entire increase in the world's production and supplied in addition, 19,000,000 bbls. to make up for the decline in other fields.

During 1924, for the first time in 19 years, there was a decline in the United States production, and this following the sharpest yearly increase recorded for this country, turned the sharp advance of 168,000,000 of last year into an estimated decline of 7,000,000 bbls. during 1924. The influence of this diminution of production accounts for the world's production remaining practically stationary during the past two years, as the increase in some of the remaining fields was counterbalanced by the decline in others.

The following table shows the production of the various countries during the last three years, in order of their importance, during 1922. The 1922 figures are given by the United States Geological Survey, those for 1923 are partly estimated and partly from official sources, while those for 1924 are estimated in their entirety.

World's Petroleum Production
(In thousands of barrels)

	1922	1923	1924
United States ..	557,531	725,702	718,000
Mexico	182,278	152,035	145,000
Russia	32,966	38,167	49,000
Persia	21,909	25,000	30,000
Dutch East Indies	16,720	15,000	15,000
Rumania	9,843	10,850	13,000
India	7,700	7,575	7,500
Peru	5,314	6,000	6,500
Poland	5,227	5,470	5,000
Sarawak (No. Borneo)	2,849	3,887	4,500
Venezuela	2,201	4,059	8,200
Argentina	3,018	3,400	3,500
Trinidad	2,445	3,050	3,500
Japan	2,042	1,695	1,500
Egypt	1,188	1,037	1,000
France	496	503	500
Colombia	323	425	500
Germany	319	335	350
Canada	179	175	170
Czechoslovakia .	120	100	100
Italy	31	32	30
Algeria	9	9	9
England	1	1	1
Others	100	150	150
Total	*854,809	†1,004,657	‡1,013,010

*United States Geological Survey. †Partly estimated. ‡Estimated.

Changes Over 1923

A study of 1924 figures shows the following additional important changes over the preceding year's production:

The Mexican fields show a decline of 7,000,000 bbls. although this is not due to a corresponding decline in production but to the artificial conditions which prevented exports from keeping up with the potential production of the fields; the unsettled political condition of the country, the unusually heavy rains, the corresponding sanding-up of the Tampico bar, and the labor disturbances, being the artificial reasons accounting for the decline of production, although, this notwithstanding, the exports will approach very closely those of the previous year. In other words, it is believed that under normal conditions the Mexican production for 1924 would show practically no decline and perhaps a slight gain over the preceding year.

Although the information relating to the Russian fields is, of necessity, fragmentary, it is apparent that the production for the present year will show a substantial increase over that for 1923, it being estimated that the yield will aggregate close to 49,000,000 or an increase of about 11,000,000 over the preceding year.

A gradual increase in the production of the Persian fields is also shown from the statistics at hand, the total being estimated at close to 30,000,000 bbls.

There is practically no change worth mentioning in the production of the Dutch East Indies, Rumania, India, Peru and Poland fields, and individual totals showing in some cases, a slight increase and in others a gradual decline. On the other hand, the development of the Sarawak or British North Borneo field shows a substantial increase in production in 1924, when it produced about 4,500,000 bbls.

Increase in Venezuela

The most important new factor in the world's oil production during the present year has been the rapid increase in the yield of the Venezuelan fields, the 1924 production aggregating 8,200,000 bbls. or double that of 1923 and Venezuela, which last year ranked eleventh among the world's producers now has moved to the seventh position, outranking Borneo, Peru and India. It is expected that this increase will be maintained and it would not be surprising if Venezuela outranks Rumania and even Dutch East Indies by the end of 1925.

—Underwood & Underwood

V. R. GARFIAS

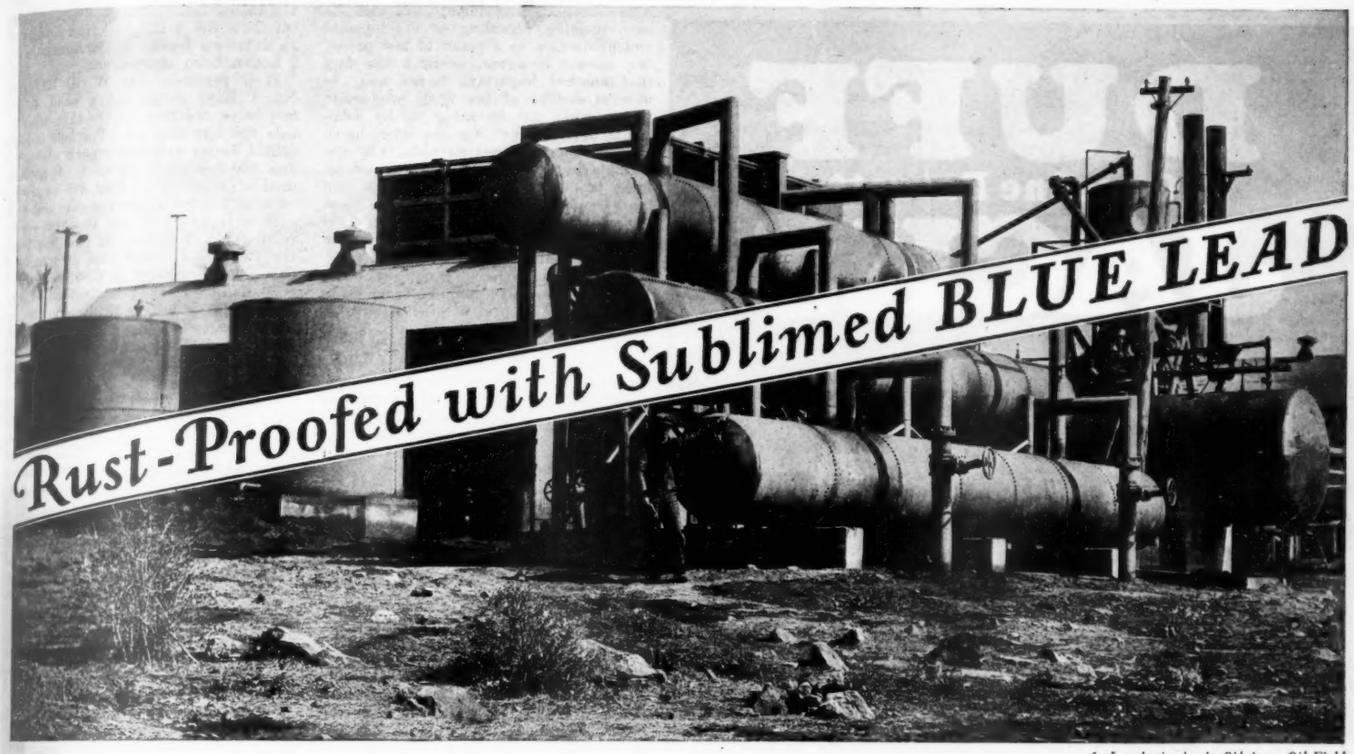
In this connection it should be kept in mind that the distance of these fields to the Atlantic seaboard of the United States is somewhat less than from the Mexican fields, while on the other hand it should be remembered that their rapid development will be retarded by the lack of proper transportation facilities out of the Maracaibo Lake, as it is expected the entire production in 1925 will come from the fields in the Maracaibo Basin. The production is at present transshipped at Curacao from the small tank steamers running into the lake to the standard tankers, this procedure greatly increasing the handling charges. But, this notwithstanding, the importance of Venezuela as a factor in the oil industry at present, and its probable greater importance in the immediate future, is well established.

There is nothing of importance to mention regarding the other oil fields listed as, without exception, they have increased or decreased only nominal amounts during the last two years.

Summarizing the foregoing it may be stated that the production of petroleum during 1924 forms, so to speak, the first terrace on the steep mounting slope of the previous 18 years' production, at no time steeper than in 1923. The present year also marks a realignment of the producing centers in which Russia has strengthened its third position and Venezuela makes the greatest forward step.

Uniform Average Conditions

As to the reason for the fairly uniform overall average condition during the past 24 months, we may note the natural reaction from the period of overproduction



An Installation in the Oklahoma Oil Field

How Sublimed Blue Lead is Especially Fitted for Painting Tanks

Write for your copy of "Rust-Proofing with Sublimed Blue Lead" —a Rust-Proofing Manual

THE unit shown above is rust-proofed with Sublimed Blue Lead in Oil. In addition to its rust-inhibitive qualities as a basic lead pigment, Sublimed Blue Lead in Oil has been found to be especially fitted to the painting of oil tanks and similar structures, because of the fact that it can be effectively lightened in color if sun-proofing is also necessary. Sublimed Blue Lead is a pleasing slate gray in color. It can either be tinted a light gray blue by the addition of Eagle White Lead in Oil, or painted over with the White Lead, without impairing the rust-proofing efficiency.

Because of the ease of application and its great covering power, Sublimed Blue Lead users find that they get all the known value of a basic lead pigment for rust inhibitive painting at a cost that is far below that of any pigment of anything like equal effectiveness. The cost of rust-proofing metal surfaces with Sublimed Blue Lead in Oil, at average prices, is approximately $3.22 per thousand feet coverage. The number of painters' hours required for a given job are frequently reduced by specifying Sublimed Blue Lead in Oil.

In addition, because of the greater covering power of Sublimed Blue Lead in Oil, it will often do the work more efficiently than most pigments with fewer coats.

The durability of Sublimed Blue Lead in Oil as a long time protector of metal surfaces has been proven both in the field and in technical tests.

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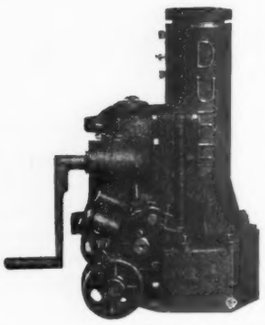
JACKS

The Genuine Barrett Oil Well Jacks are made in several sizes and capacities, for wrenching and unwrenching oil well tools. Above is shown the improved No. 2, with wide flanged rack and double-acting ratchet mechanism, most powerful circle jack made.



50- and 75-ton
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The powerful Duff High Speed Ball Bearing Screw Jacks have been adopted by America's leading railroads for raising locomotives. They are the simplest, most dependable, and repair-free jacks that can be used for deep well fishing and emergency lifting.

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Especially suitable for rough outdoor usage, all working parts being of sturdy design, packed in grease, in leakproof case. Will give a lifetime of service, practically without attention or repairs. Loads can be lifted on the head or on the "toe." Made in sizes from 10 tons capacity up to 50 tons.

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in the United States during 1923 with the corresponding retarding of development and production as a result of low prices. We cannot, however, overlook the fact that another important factor was the natural decline of the flush production which could not be made up by additional development. On the other hand, owing to more efficient methods, it is now possible to extract greater yields of refined products from a given crude and more economically meet the market needs for any given product and thus in 1924 less barrels of crude oil were needed to supply the same amount of refined products than in former years. In other words, on the same refining basis as in former years, the present production is in effect larger than the actual figures would indicate.

Although in the opinion of the writer the estimates of future production and prices are for the most part misleading conjectures, it seems clear that the producer should be cautioned against unfounded optimism in view of the present temporary gradually declining production in the United States. It should be remembered that the present rate of production is sufficient to take care of contemplated consumption, without necessitating drawing from stocks for months to come, and that there are at present in the United States alone, enough oil stocks above ground to take care of the consumption of the entire world for over six months. Furthermore, the discovery of a new pool either in the United States or in Mexico, or the development of deeper horizons in the old ones by the improved drilling methods lately adopted, to say nothing of a normal improvement in Russian conditions, or a more intensified development of the Persian and Venezuelan fields, will easily and quickly again unbalance the industry into a period of congested oversupply and corresponding noncompensatory prices.

KENTUCKY-TENNESSEE

(Continued from Page 58)

4 Howard, drilling at 340 feet; Moore & Baker's No. 2 Gassaway, a rig; Henderson Oil Co.'s No. 2 Burris, 320 feet; Star Oil Co.'s Nos. 12 and 13 Ritchie, down 400 and 200 feet, respectively; same company's No. 4 Starr, 500 feet; No. 4 Free, shut down at 200 feet; Carter Oil Co.'s No. 4 Gooden and No. 1 Jess Winginger, being rigged up; Ziegler, Scott & Hice's No. 2 Bradford, being cleaned out after a shot; Mazel Oil Co.'s No. 6 Childress, a rig; same company's No. 5 Neely, on top of pay sand; Roederer & Stafford's No. 1 V. Neely, being cleaned out.

Other drilling: Consolidated Oil Co.'s No. 1 C. Bradford, spudding; L. J. Emery's No. 1 Greer, down 320 feet; same parties' No. 2 Bridges, drilling at 232 feet; Bishop & Son, starting No. 3 Bishop; Roederer's No. 1 Price heirs, 203 feet; Stafford and others' No. 1 Settle, 32 feet; Wood Oil Co.'s No. 1 John Church, 342 feet; same concern's No. 3 Will Church, making hole at 97 feet; Brindall & Maxey's No. 1 Oaks, put on the pump; Stafford & Maxey's No. 2 Ritter Brothers shut down at 430 feet; Porter and others' No. 1 McLaughlin, making headway at 267 feet; T. L. Gorby's No. 1 Chamberlin, being cleaned out; Esslinger Oil Co.'s No. 1 Bud Mansfield shut down at 200 feet for repairs; Jackson and associates' No. 1 J. C. Hutchinson, drilling at 123 feet.

Allen County

Three dry holes were the result of the week's work in Allen County. In the Gainesville district, W. R. Thompson's No. 11 Motley at 381 feet; Davis & Co.'s No. 2 Dodson at 306 feet and Peerson & Neely's No. 1 Dodson, Tract 2, at 290 feet. The two latter holes were in the Justice area.

Cumberland County

In the Kettle Creek district, A. S. McClintock is deepening No. 1 Bud Kerr, discovery well, to 325 feet below the Pencil Cave. The Daniel Boone Oil Co. is drilling No. 1 Logan heirs at 820 feet; West and others' were spudding in on No. 1 Love Coe; Dayton Oil Syndicate's No. 4 Kim Crawford shut down at 500 feet; Coe and others' No. 1 M. Scott shut down at 140 feet below the Pencil Cave; Young Oil Co.'s No. 3 R. L. Coffee, drilling at an unknown depth; E. N. Ahlfeldt's No. 3 Logan, being cleaned out.

It is reported that W. S. Raydure's No. 1 King picked up a sand at 270 feet below the Pencil Cave that filled the hole 400 feet with oil. The hole is being drilled deeper and late reports state it is now 300 feet below the cave. If no other sand is picked up the hole will be plugged back to 270 feet below the cave and shot.

It is reported Wilcox Brothers recently shot No. 2 Rainey at 314 feet below the Pencil Cave and that it pumped 6 bbls. This property is 3 miles south of Burkesville in the Cumberland Valley. This company is now drilling on the Davidson tract at the head of Sulphur Creek. It is reported a location has been made on the Sharp farm in the same vicinity by these people.

W. S. Raydure's No. 3 on the Mrs. Coop was drilling at 730 feet, 175 feet below the Pencil Cave, where it is showing for a good producer. No. 1 on this farm which came in for 1,000 bbls. is being drilled deeper. It is now down 265 feet below the cave.

The Vedder Oil Co.'s No. 1 Boles at Fanny's Creek was drilling at 638 feet, 35 feet below the cave. Oil and gas in small quantities were found in the stray sand at 192 feet and in both the first and second Sunnybrook sands.

CORYELL CHALLENGES BRYAN'S STATEMENT

LINCOLN, Neb., Nov. 22.—L. L. Coryell, president of the Nebraska Independent Oil Men's Association, flatly contradicts some of the utterances of Governor Charles W. Bryan regarding gasoline.

"Gasoline prices have been increased in every town in the State except Lincoln, from 1 to 3 cents a gallon, following the announcement that Nebraska had gone Republican," Governor Bryan said. "The very next day the word went out to increase prices all over the State. But they didn't dare increase in Lincoln because I had my State gasoline station here."

Coryell, in an open letter to the Governor, challenged the statement and says that in over 300 towns in Nebraska there has been no advance since election, and that in those towns where an advance has occurred, dealers had been selling below cost. These, he says, are few in number.

Several days after the election Governor Bryan announced that Nebraskans were already paying $300,000 a day more for their gasoline than before the election and all because of the result. According to the Governor's figures this increase would be at the rate of about $9,000,000 a month, or over $100,000,000 annually.

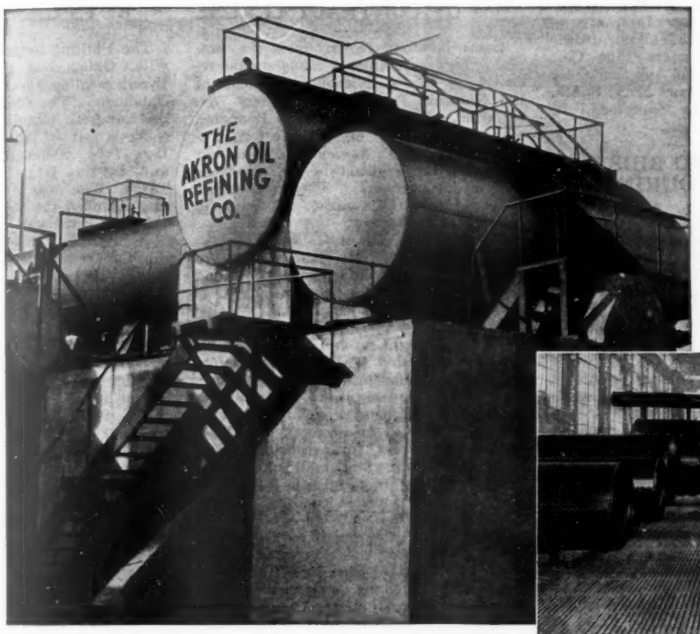
"Ridiculous," says every one who knows anything about the amount of gasoline consumed in Nebraska. The gasoline bill of the entire State does not amount to $100,000,000 annually, nor anywhere near that amount, much less the alleged increase since the election.

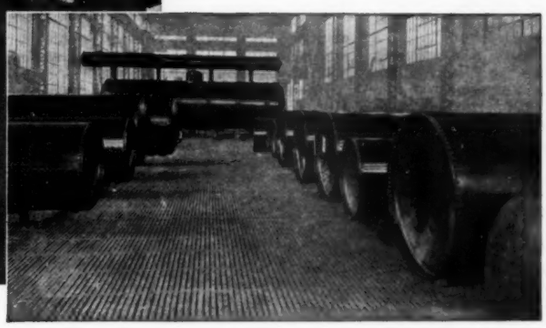
GASSER IN FOX FIELD

ARDMORE, Okla., Nov. 22.—Another gasser has been completed in the deep pay in the Fox Field of Carter County with the bringing in of the Love-Thurmond No. 7, fee, in the NW NW, Section 34-2s-3w, which gauged 6,250,000 feet from sands at 3,029-65, 3,107-15, 3,148-56 and 3,173-91 feet. Rock pressure tested 1,140 pounds. The Lone Star Gas Co. has connected.

PAN AMERICAN CONFERENCE

A Pan American conference on standardization will be held in conjunction with the Pan American Scientific Congress at Lima, Peru, December 23. In addition to the 21 American Republics invitations have been issued to about 60 technical and trade associations in this country. The American Engineering Standards Committee is making the arrangements.





The Akron Oil Refining Co. uses Biggs Tanks of all sizes and dimensions from 500 to 12,000 gallons capacity.

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Storage tanks, all kinds up to 80,000 barrels capacity
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TO the buyer of tanks and other steel plate work it is vitally important to know the best available sources of supply. This equipment runs into a lot of money and represents a big investment, and if it isn't satisfactory the loss is likely to be considerable.

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If you have not tried us out on any of your work, you may have overlooked your best available source of supply. We would like a chance to prove it, at least. You will find us good people to deal with. May we have your next inquiry for any of the products here listed?

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BIGGS RIVETED TANKS
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159

REFINING AND MARKETING

STORAGE-IN-TRANSIT TESTIMONY SUBMITTED

Hearing of the case of the Western Petroleum Refiners' Association and nine other complainants against the St. Louis-San Francisco Railway Co. and numerous other defendants requesting the establishment of a storage-in-transit privilege at St. Louis, Mo., on iron and steel pipe and fittings was held Wednesday and Thursday, November 19-20, in Tulsa, by Examiner John L. Howell, of the Interstate Commerce Commission. Briefs on the case, known as I. C. C. Docket No. 16128, are due January 2, 1925, after which the examiner will issue a proposed report, which will be served on the two parties. Then if either side takes exception to the report, these exceptions will be filed and argued orally at a later date, after which the final decision will be announced.

Oil men and attorneys who attended the hearing feel that the Western Petroleum Refiners' Association and the other complainants have made a good case for the establishment of a storage-in-transit privilege at St. Louis. P. A. Conway, commerce counsel for the refiners, conducted the case for the complainants, assisted by A. V. Bourque, of the Association of Natural Gasoline Manufacturers, and E. W. Wilson, of the Frick-Reid Supply Co.

O. V. Borden, secretary of the Purchasing Agents' Association of Tulsa, in his testimony showed that approximately 20 per cent of the annual expenditure of the Mid-Continent oil companies was for pipe and casing. Estimates for 1924 indicate a total expenditure of about $500,000,000 by Mid-Continent concerns, making about $100,000,000 spent for tubular goods. It is thought that this figure, estimated from figures of members of the association only, will represent about one-half the actual expenditure for pipe in the Mid-Continent. He showed that shipments of pipe from the mills take from 14 to 20 days while shipments from St. Louis take only four days.

S. L. Gilliam, superintenden of warehouse materials for the Cosden Companies, showed that the location of a centralized stock of tubular goods at St. Louis would reduce the stock necessary in field warehouses. He showed that interfield movements required more time than shipments from St. Louis. F. W. Robertson, purchasing agent for the Skelly Oil Co., showed that the best service by carriers under present conditions could not alleviate delays due to failure to receive pipe shipments when needed. These delays put a heavy economic burden on the industry, he said. It was also unsound economics to rush large stocks of pipe and casing into the new fields before a thorough development has taken place, he said, a condition which often is found under the present arrangements. Back hauls would be eliminated with the establishment of storage stocks in St. Louis.

L. W. Witte, assistant traffic manager for the Cosden Companies, showed that carriers accorded other shippers privileges similar to the one being requested. By comparison with other types of freight, he showed that tubular goods were entitled to this prvilege. He showed that shippers of tubular goods were under serious handicap due to the increases in freight rates since 1917. He also showed the relation of the oil industry to the other industries in the percentage by which the finished products of various manufacturing industries exceeded the cost of the raw materials. Oil showed an increased value of only 16 per cent while the average for all industries was 39 per cent.

Charles R. Musgrave, traffic manager for the Phillips Petroleum Co., was examined by Mr. Bourque. Other witnesses for the complainants were as follows: J. L. Shakely, sales manager for the Frick-Reid Supply Co.; W. W. Stumph, traffic manager for the International Supply Co.; C. F. Hallenbeck, traffic manager for the Interstate Pipe Co.; M. C. Richards, traffic manager for Spang, Chalfant & Co., and E. A. Smith, traffic manager for the Superior Tube Co.

SHIPPING BOARD BIDS FOR OIL DURING 1925

WASHINGTON, D. C., Nov. 22.—Bids for 5,325,000 bbls. of bunker and cargo fuel oil for use of Shipping Board vessels at Gulf and Canal Zone ports in 1925 were opened at the Department of Purchases and Supplies of the Emergency Fleet Corp. The offers submitted were as follows:

Magnolia Petroleum Co., six or twelve months—Port Arthur, Sabine, Beaumont and Magpetco, $1.50 per barrel at terminal; $1.60 at barge.

Interstate Commercial News Service, New York, twelve months—New Orleans, Galveston and Port Arthur, $1.53 first quarter; $1.46 second quarter; $1.33⅓ third quarter; $1.30 fourth quarter, or $1.25 for whole year with option to increase quantity 20 per cent.

Union Oil Co. of California, six or twelve months—Balboa and Cristobal, $1.71 on maximum of 50,000 bbls.

Standard Oil Co. of New Jersey, twelve months—New Orleans, bunker, $1.50 at terminal; $1.56½ at barge; Galveston, bunker, $1.62 at terminal; Baytown, bunker, $1.55 at terminal; Baton Rouge, cargo, $1.45.

Gulf Refining Co., Pittsburgh, six or twelve months—Port Tampa, bunker, $1.65 at terminal; New Orleans, $1.65 at terminal; Galveston, $1.50 at terminal; Port Arthur, $1.50 at terminal. Option to increase quantities 10 per cent per month.

Mexican Petroleum Oil Co., six or twelve months—New Orleans and Tampa, bunker, $1.50 at terminal; $1.56½ at barge; Galveston, $1.50 at terminal; Cristobal, $1.80 at terminal. Option to increase quantities 10 per cent.

FULLER'S EARTH USE DECLARED BENEFICIAL

BARNSDALL, Okla., Nov. 22.—The use of Fuller's earth in refining light oils is giving beneficial results, according to reports from the Barnsdall Refining Co.'s plant here. The process is used on vapors from the cracking stills and consists in passing the vapors through the Fuller's earth and then to the condensers, where the vapors are liquefied and sent to the rundown tanks. The Fuller's earth is said to have a distinct effect on the vaporized unstable hydrocarbons turning them to stable hydrocarbons in which form they are recovered, thus eliminating many of the usual bad features attending utilization of cracked products.

TO CUT OMAHA PRICES

OMAHA, Neb., Nov. 22.—H. M. Michel, independent owner of two Omaha filling stations that have figured prominently in the gasoline "war" for the last six months, announces that he has secured $100,000 backing and will put in a chain of 10 or 12 additional stations in the city of Omaha. Michel says he will continue his "cut price" methods.

DENIES RUMANIAN DEAL

NEW YORK, Nov. 22.—A. C. Bedford, chairman of the board of the Standard Oil Co. of New Jersey, states there is no truth in the report from London that Royal Dutch-Shell Group is acquiring the Romano-Americana Co. the Rumanian subsidiary of Standard Oil Co. of New Jersey.

QUESTION LEGALITY OF CONTRACT CLAUSE

Legal opinions frown upon the proposed marginal contract made public recently by L. V. Nichols, president of the National Petroleum Marketers' Association, according to Howard Bennette, managing director of the Western Petroleum Refiners' Association, who has submitted the contract to the attorneys for several refiners. These attorneys have rejected the contract as being in conflict with the law.

Mr. Bennette says as follows:

"We understand Mr. Nicholas offered the contract for the consideration and criticism of the industry and not as a finished or final answer. It was our purpose to immediately submit the legal questions thought to be involved to attorneys associated with member companies for examination. Before, however, this could be accomplished we were advised that the contract had been submitted to several members of the Association by jobbers, for execution. With knowledge of this fact, and entertaining a doubt as to the legality of the contract, we felt impelled to issue bulletin No. 117-A, under date of October 30, calling to the attention of our members the probability of the contract being in conflict with the Sherman Anti-Trust Law, and suggesting that in the event they contemplated the execution of the contract it be referred to their legal staff for an opinion. The only purpose of the said bulletin being to direct an inquiry into the legal phase of the contract."

Regarding the contract, John H. Brennan, general counsel for the Barnsdall Oil Corp., said as follows:

"Under the authorities I am compelled to reject the proposition as being in conflict with the Sherman Anti-Trust Law, and perhaps in conflict with similar laws passed by the several States. I think the proposition is too plain for the citation of authorities at any great length.

"It would be a serious case under any circumstances between private corporations or individuals, but becomes more serious when it is sought to impress it as a policy on a great branch of the oil industry in those times of public unrest. The proposed form of contract seeks to do the very thing that the laws of our country say should not be done. In every case in conflict with these laws the parties interested are controlled in their conduct by some laudable purpose with reference to the economic condition of their own particular business. But this makes no difference."

MICHIGAN OIL MEN

JACKSON, Mich., Nov. 22.—The annual convention and equipment exhibition of the Michigan Independent Oil Men's Association will be held at Grand Rapids, Mich., January 21-22, according to a recent announcement made by James A. Gilmore, field secretary of the association. H. H. Ragle, of Jackson, president, will call the convention to order. A program will be announced later. Headquarters of the convention in Grand Rapids will be at the Pantlind Hotel.

W. P. R. A. MEETINGS

The regional conferences of the Western Petroleum Refiners' Association, started in Texas a few days ago by Howard Bennette, managing director, have been extended northward, with meetings during the past week in Kansas City, Chicago and St. Louis. A meeting is planned for Wichita, Kans., during the week following. A meeting of the manufacturing committee has been called at Tulsa, November 29. The directors will meet in Fort Worth, Tex., during the sessions of the American Petroleum Institute, December 9-11.

PHILLIPS PETROLEUM CO. BUYS GASOLINE PLANTS

The Phillips Petroleum Co. of Bartlesville, Okla., has purchased the Hull-Tyrell gasoline plant in the Stroud Pool, Oklahoma. The company also purchased the Landreth Gasoline Co.'s plant which controls all of the gas rights in the Ibex Pool, Shackelford County, Texas, and is the largest gasoline plant in Texas. The deal with the Landreth Co. also included the purchase from them of 125 new insulated tank cars.

In addition, the Phillips Co. purchased the Landreth Production Co.'s property in the Ibex Pool, which includes 2,000 acres of proven oil territory, on which there are 19 producing oil wells. The Phillips Co. also purchased the Landreth Gas Co., which handles about 50,000,000 feet of gas daily, the major portion of which is being sold to the Lone Star Gas Co.

The Phillips Co. has placed an order for equipment for building a new gasoline plant in the Papoose Pool, Hughes County, Oklahoma. The equipment purchased is sufficient to handle all the gas from the entire pool.

It is understood that the above transaction involved an expenditure in excess of $4,000,000 by the Phillips Petroleum Co.

With the acquisition of the above plants the Phillips Co. is said to have 23 gasoline plants with a production in excess of 7,000 bbls. net natural gasoline daily, equivalent to approximately 300,000 gallons net daily.

PENNSYLVANIA "GAS" TAX

HARRISBURG, Pa., Nov. 22.—Gasoline tax payments for the quarter ending September 30 totaled $2,564,097 State Treasurer Charles A. Snyder announced. Of this amount which exceeds that for the quarter ending June 30 by more than $300,000, one-quarter will revert to the counties. The collections were made on sales in July, August and September, under the emergency tax law passed by the 1923 legislature which placed a tax of 2 cents a gallon on gasoline. Collections in Philadelphia were $371,009 and in Allegheny County, $361,171.

INDIAHOMA TO RESUME

OKMULGEE, Okla., Nov. 22.—Reports here indicate that the plant of the Indiahoma Refining Co., one of the oldest independent refineries in this part of the State, which has been in the hands of receivers for several months, will resume operations at once under a new organization headed by Baltimore, Md., men. Executive offices will be maintained there. F. C. Winters, formerly connected with the Indiahoma, will be secretary of the new concern and will move his headquarters to Okmulgee.

DUBBS PROCESS IN JAPAN

The new Tsurumi refinery of the Nippon Oil Co., dominant factor in distribution of petroleum products in Japan, has been opened recently, according to recent reports. O. H. Fairchild, an American engineer, has completed the installation of the Dubbs process for cracking purposes. The Tsurumi refinery is the first to be built on the Japanese coast and is the first to install a cracking process.

MIDWEST CURTAILMENT

CASPER, Wyo., Nov. 22.—Accumulation of stocks and weaker tendencies in the gasoline market was the deciding factor in causing a curtailment in runs at the plant of the Midwest Refining Co. here. The refinery runs have been cut from 4,500 bbls. to 3,500 bbls. daily.

"Be Square Products"

BARNSDALL

Engaged in Every Branch of the Petroleum Industry

The BARNSDALL REFINING COMPANY is one of the subsidiaries of the BARNSDALL CORPORATION, which has assets of over Forty Million ($40,000,000) Dollars;

With twenty-seven thousand domestic gas customers in twenty-eight municipalities in the states of New York and Pennsylvania;

With approximately 300,000 acres of oil and gas leases extending from Pennsylvania to California—with only ninety thousand acres operated and developed, upon which there are twenty-six hundred oil wells producing more than seven thousand barrels of crude oil daily and six hundred twenty-five gas wells, and six hundred miles of pipe lines;

With a fully equipped, complete, modern refinery located at Barnsdall, Oklahoma, in the heart of the corporation's mid-continent production, with over one hundred miles of pipe line transporting the crude oil to the refinery, where it is manufactured into high grade, uniform quality products, including Lubricating Oils, Cylinder Stocks and Wax;

With twelve absorption gasoline plants to extract the natural gasoline from the casing head gas of the producing oil wells and a fleet of steel tank cars for shipping and transporting all of its refined oils to market;

With an export department constantly preparing shipments of Barnsdall Products for export to European countries and South America, through the ports of New Orleans and Mobile;

With a large warehouse and storage plant in Kansas City, Mo., with distributing stations well located in the agricultural country of Missouri and Kansas.

Our Own Crude — Our Own Refinery

Our Own Pipe Lines — Our Own Tank Cars

"A Dependable Source Supply"

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New York Pittsburgh Detroit St. Louis Kansas City St. Paul Los Angeles Tulsa

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Refiners Turn to Domestic Burner Oils

Mid-Continent Manufacturers Impressed by Increasing Market Prepare to Seek Their Share of the Rapidly Developing Business

By Ralph T. Baker

With the approach of the winter season refiners have been giving more attention to the prospects for the sale of straw distillate and other heavier and darker domestic burner oils. During the early days of September, a short cold snap and buying for storage were the causes of a heavy demand for distillates of every description, with the result that the available Mid-Continent supply was soon depleted and refiners started to turn to the manufacture of this kind of material in the belief that it would prove a profitable source of revenue. Immediate demands were quickly filled and jobbers then reported only scattered sales following the warm weather which marked the autumn season in all parts of the United States.

Refiners have been quick to realize the tremendous importance of an increased market for domestic burner oils and most of the Mid-Continent refiners are prepared to take advantage of their share of the business which should naturally fall to those plants making products which can be used in the home burners. It is the prevailing opinion among the trade that the burner business during the coming winter will consume a larger amount of distillates than during the winter months of 1923-1924. Thousands of new installations have been made in the Eastern and Central States and jobbers are now better prepared to handle their local demands.

Handicapped by Season

The disappointing feature from the refiners' standpoint has been the retarded demand due to the late autumn season. Several refiners assert that the wisest of their number are those who watch the weather reports carefully and govern their operations accordingly. They declare that in good motoring weather, such as that which has prevailed during the autumn months, gasoline should be made the specialty. With the advent of continued cold weather, however, they assert that changes should be made in processing so that the best possible advantage can be taken from the manufacture of burner distillates and other fuel oils. The lateness of the cold weather this year follows a late winter in 1923 and a late spring in 1924. Backward seasons appear to be influencing refinery operations to a noticeable degree.

Mid-Continent refiners, however, will not be caught napping with the possible advent of a big demand for burner distillates. Most of them report processing methods of such elasticity that they can start the manufacture of distillates at any time, contingent upon the price and demand for nearby cuts, such as kerosene, gas oil and fuel oils.

One refiner reports his plant has been putting out a 38-40 gravity straw distillate as a result of the demands from the trade. This distillate is taken as a cut from the straight skimming operation and is received as a 36-38 gravity amber colored product with a flash of about 220 degree Fahrenheit. Naphtha is then used to bring the gravity up to the required point and to lower the flash point to approximately 165-175 degrees Fahrenheit. The matter of the flash point is regulated by the various States, but refiners assert that with the present burners, low flash points are deemed desirable to insure quick starting from the pilot lights or automatic starters. The naphtha used in "sweetening" the distillate averages 44-46 gravity, and less than 10 per cent ordinarily is added to the distillate cut.

Growing Demand

This refiner also reports a growing demand for the 36-38 gravity distillate which is being furnished with a flash of 200-220 degrees Fahrenheit. He feels the trend of consumption is away from the higher gravity product to the lower product. He recognizes that additional improvements may be necessary in the application of the heavier product to home burners and he asserts the consuming public will have to be educated to accept a heavier and darker liquid for fuel. He feels this is a logical step with a continued growth in the demand for home burner oils and he even anticipated burner oils as low as 34-36 gravity as the ordinary accepted fuel a few years hence.

This refiner, who also operates a cracking plant, asserts he will be able to recover an appreciable amount of burner distillates as a result of his cracking plant operations, in addition to the material secured in his skimming operations. Due to the fact that distillate from the rerunning of pressure distillate bottoms tends to turn off color quickly and in some cases difficulty is found in eliminating suspended carbon and other matter which give the distillate a black color, he does not advocate the use of distillate from this source unless backed by an unprecedented demand.

On the other hand, the distillate cut in skimming processes on the crude oil which he used, amounted to 5 or 6 per cent of the total amount of crude run to the stills. This cut was found to operate with more difficulty as charging stock for the cracking plant and in times of low kerosene prices it has been found advisable to utilize it as domestic burner oil. But it is understood in case a big demand for gasoline is experienced, this distillate cut, together with a gas oil cut more than probably will be thrown into the cracking plant.

Change in Processing

Thus the advisability of making distillates in this plant depends upon the demands and prices for gasoline, kerosene, gas oil and fuel oil as well as the home burner fuel. A greatly increased demand for these distillates will be met with some slight change in processing methods, none of which is radical in character, the present elasticity in processing taking care of the requirements. Most of the Mid-Continent refiners display similar characteristics in their ability to meet demands for the special cut with little trouble.

The necessity for more domestic burner fuel will be met by deeper cuts into the crude, taking in part of the materials now sold as gas oil or lighter fuel oils, which are now prominent as charging stocks in operating the cracking plants for cracked gasoline. In conjunction with this matter it might be pointed out that such a move would hinge upon the acceptance of a lower grade of domestic burner fuel by the consumer. This, however, is thought to be the ultimate outcome by the refiner in question.

Another possibility is seen in the use of burner distillate obtained by rerunning the pressure distillate from which the cracked gasoline has been distilled. As previously stated, it is hard to maintain a good color in this material. However, the refiner mentioned above asserts that objections to color will be overcome in the future, provided the high character of the distillate is maintained and regulated by the various essential tests. Care should be taken that no distillate from this source is sold containing suspended carbon which will clog the burners, causing instant condemnation of the fuel on the part of the user and a return to a demand for light colored product.

Relation of Products

The initmate relationship between the various petroleum products was brought out vividly by this refiner who showed that fuel oils when cheap could be profitably run to the cracking plant in order to secure gasoline that was commanding a high price. This is true whether the charging stock for the cracking plant is low grade fuel oil, gas oil, straw distillate or even kerosene. High priced gasoline and low priced fuel generally necessitated the continued operation of the cracking plant, he asserts. When gasoline is relatively cheap, however, and heavy grades of fuel are high, the middle range of fuel oils only are used for charging stocks, as much gasoline being sold as advisable. Every care is taken also to put as much of the distillates and gas oil in with the industrial grade fuel oil as possible. When all fuels are high and gasoline is cheap, it is general practice for gasoline to be taken in the skimming operation and the cracking plant to be shut down, giving an opportunity for the sale of all fuel oil, gas oil, distillate and kerosene that can be produced.

It often occurs that one kind of cut of fuel oil will be found more advantageously made over a period than another. For instance, some refiners find it good practice to manufacture kerosene, gas oil and fuel oil at certain periods, eliminating the home burner distillate cut entirely. In season, however, they can switch back to the manufacture of the home burner distillate. Some refiners at times find it profitable to crowd as much kerosene as possible into the cut intended for home burner use also. Gas oil, on the other hand, may also afford a considerable amount of the heavier materials to offset the increased amounts of the lighter stuff secured from the kerosene.

Elasticity in Methods

The elasticity of the processing methods described above may be applied by practically every Mid-Continent refiner. Some have only skimming plants. Some have cracking plants which require a different kind of charging stock, limiting them in their selection of cuts. But on the whole, Mid-Continent refiners are capable of producing home burner distillates in sufficient quantities upon assurance of a fair price.

Another refiner has been preparing for a big trade in a 37-39 gravity straw colored distillate for home burners, which is in reality an unfinished kerosene stock with a flash of 160-180 degrees Fahrenheit. This consists of a straight cut from the crude with the addition of a fair amount of burner distillate cut from the pressure distillate following the driving off of the lighter products. The average amounts will vary from 4 to 5 per cent from the crude and about 2 per cent from the pressure distillate.

This refiner also declares care must be used in the preparation of the burner distillate from the pressure distillate due to its tendency to go off color after standing in storage. Good amber colored material may be turned out, he says, augmenting the supply from the crude cut. He declared Mid-Continent refiners were turning to the manufacture of domestic burner fuels with larger interest and several plants were offering this grade of fuel for the first time during the present season.

Some refiners have put forth the contention that they are unable to make and sell straw distillate or the domestic burner fuel at a price appreciably under that of kerosene. There is a tendency on the part of some refiners to bring the distillate price up to that of kerosene. Other refiners, however, feel they can profitably accept a lower price for the domestic burner oils. One refiner declared his normal cuts in his processing for kerosene averaged from 40.1 degrees to 44 degrees gravity. His straw distil-

(Continued on Page 130)

GREAT DEVELOPMENT OF NATURAL GASOLINE INDUSTRY DESCRIBED

By D. E. Buchanan

Before National Petroleum Marketers Association

By way of explanation, it might be well to say that the term natural gasoline was created and adopted by the Association of Natural Gasoline Manufacturers. It covers all gasoline manufactured from natural gas by the compression and absorption methods and the terms "compression" (or casinghead) and "absorption," are now used only to designate the two general classes under the head of natural gasoline.

The first record of commercial use of natural gas in the United States was at Fredonia, N. Y., in 1821, where a gas well 21 feet deep supplied gas for 30 burners. The first for manufacturing purposes was at East Liverpool, Ohio, in 1863. The first natural gas pipe line was built in 1876 to supply Titusville, Pa., from a well 786 feet deep. Natural gas did not, however, become of any particular economic importance until the decade 1880-90. During that 10-year period many cities in Pennsylvania, Ohio and West Virginia were supplied with gas.

The presence of gasoline in natural gas was first discovered in the early 80's. Many operators of natural gas transportation lines, experienced trouble with condensation in the lines. It was soon discovered that this condensate was gasoline and drips were installed in low places and sags along the lines to accumulate and permit the removal of the condensate. As there was practically no market for gasoline at that time, the product was generally wasted, at least no commercial use was made of it. It soon became the practice to use it for boiler fuel on the leases, but the value of the product was no incentive for recovering it; it was simply a matter of eliminating an objectionable operating condition.

It is recorded that in 1903 the business of collecting this drip gasoline and marketing it was first established. Of course, at that time, the facilities for extracting the gasoline were very crude. The gas line pressure was used and a few cooling coils were installed which removed only the heavier gasoline fractions. This production was collected in wooden barrels and sold in the vicinity of Parkersburg, W. Va., for blending purposes. It is pleasing to note that the company which purchased this first drip gasoline has used natural gasoline in increasing quantities every year since that time and is today one of the largest users. This can surely be taken as a forceful testimony of its value and usefulness.

From the time it was discovered that gasoline would precipitate out of natural gas, when subjected to pressure and low temperature, until about 1907, it was thought that all natural gas contained gasoline in commercial quantities and

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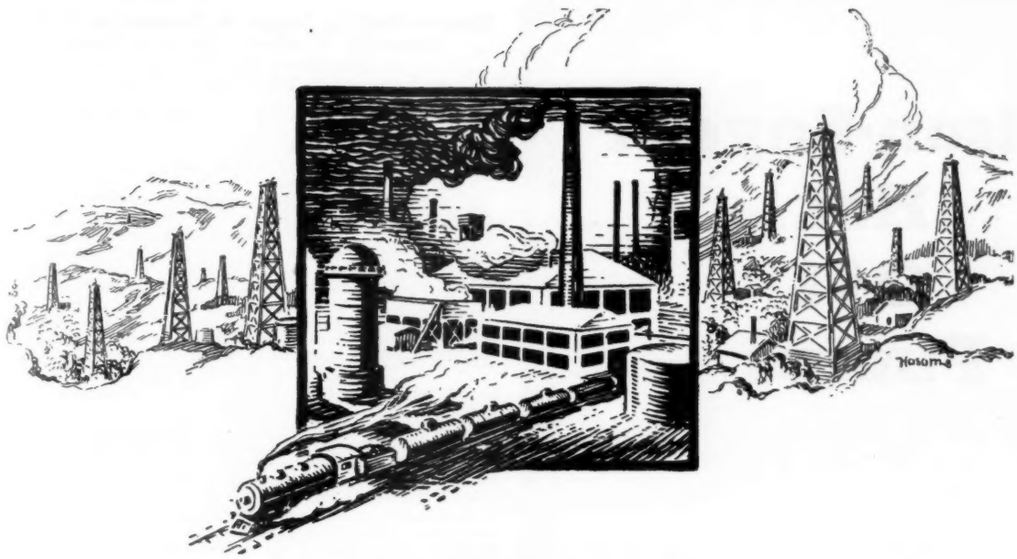

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CHICAGO REPORTS GOOD BUSINESS

Gasoline Bulking Larger in Expectation of Higher Prices and With Favorable Weather. Blends in Demand. Kerosene Slow. Distillates Not Moving as Hoped. Fuel Oil Very Strong. Gas Oil Better

By John B. Waldo

CHICAGO, Nov. 24.—Chicago oil men who attended the convention at Cleveland returned to find their offices had not been idle but had booked a good line of business during the week on the wanted products which right now are gasoline and fuel oil. The weather has not been cold enough to move any substantial quantity of the oils required for domestic oil heaters. The gasoline business is bulking larger than the trade really anticipated. It is not a steady rush of orders but during each week the active sellers receive a good total. The way prices are advancing tells there is business being done. Were the demand small in volume prices could not have been advanced from a low of at least 6½ cents for U. S. Motor gasoline to the present level which is 8 cents and which looks as if it might go higher.

The present demand does not come entirely from the actual daily consumption of gasoline. The trade expects higher prices all along the line beginning with the posted prices for crude and believes it safe to carry stocks even at present costs at the refinery and a considerable part of the month's shipments will be held by jobbers against future business. If a time should come in the near future when the jobbers could see lower costs to them for gasoline, they would be able to carry on for quite a while with no very extensive purchases. At least this is a view of the situation held by quite a number of the local trade. These do not look for lower levels in the price structure. In fact the talk is that a crude advance cannot be much longer delayed and this will be followed by increases in the refinery and tank wagon markets.

U. S. Motor Advances

During the past week the price for U. S. Motor gasoline in the spot market has advanced from a range of 7½ to 7¾ cents to 7¾ to 8 cents with a tendency to step up another notch in the early future. Sales are being made regularly at 8 cents and the refinery market is now generally held firmly at 7¾ cents by all refiners.

The head of a large distributing organization with stations in three States said in the larger towns his station sales were about equal of Navy grade and the higher gravity, in this case a 64-66—375 gasoline for which the selling price was 4 cents above the regular service station price. Another down State jobber said he sold as much of the better grade during the colder weather but he offered motorists a 60-62—440 product and asked 3 cents more than the station price. Both agreed there was no objection to paying the higher price for the better gasoline and the down State jobber said his sales of this grade became so large that his chief competitor, the Standard Oil Co., put in a special pump and stocked its "Solite" grade at 3 cents above the regular station price. The manager of the latter station told the jobber he was forced to do this by the demand from customers and that not to do it meant a loss of an important part of his gallonage. The head of the large distributing organization said the Standard was beginning to feature its higher gravity in his towns. The experience of these two distributors indicates what has been contended right along that there are plenty of motorists who want and will pay for a better grade of gasoline, not that the Navy product is not a satisfactory motor fuel. Not every motorist is content with a Ford or even a Buick. There is a steady demand for such cars as sell at several times the price of the latter, yet the Ford and the Buick please a great many motorists.

The demand for blends is said to be good but the bulk of the local trade does not do much in the blend business. It is now more or less of a specialty with certain concerns. The natural gasoline has been very strong and some of the prices have been advanced particularly in the higher gravities grades. The very valuable address by D. E. Buchanan at the convention will help some of the industry place this product where it belongs as an essential to the present day supply of motor fuel.

Kerosene Slow

The orders for kerosene are rather straggling and not so many as the trade would like and really expect to have at this time of the year. The price situation has shown no change, the market being dull and easy for all gravities. Distillates are not moving as the trade expected but the explanation is that the weather has not taken real change to colder temperatures and in the middle of many days it is more comfortable without than with a fire. It is during these periods of betwixt and between weather the oil burner makes its best showing compared with coal. Really a few gallons of oil lasts quite a time. The oil burner checks itself when the temperature reaches a certain designated point on the thermometer while the coal will go on burning slowly but wasting just the same. There seems to be no reason to change any opinion expressed regarding the consumption of domestic fuel oil once winter hits its stride but it is not the best kind of a season to test the possibilities of the oil burner for the industry. Several points made regarding the relations of the oil burner to the oil industry were brought out in the discussion at Cleveland. The one point it is most essential the oil men shall impress on the burner maker is that the burner should be adjusted to the oil, not the oil to the burner. Distillates are easiest to burn, they give a little less heat than the heavier oils but the thing to do is to travel the middle of the road and avoid extremes. Then every oil man will have a supply of the one necessary fuel oil for domestic oil burners. Some oil men figure the public will pay as high as 15 cents a gallon for oil. The writer believes this is a mistake. It gives the coal man too much opportunity. The coal man is doing all that he can to improve his own service and product and the fact is there are a lot of the burner man's arguments that will not stand investigation. Some still stand on comparative costs but most are getting away from that basis and arguing solely along the lines of comfort, convenience, health and the like. The burner industry is not a finished industry and will not be until the point of quantity production and a more reasonable price is reached. In many districts around this city and on it, the peak of sales that can be made at the present costs has been reached.

Fuel Oil Strong

Fuel oil is still very strong but the strength comes from the fact that the supplies available to buyers are light. The market is fairly active with a lot of moderate orders and many inquiries but little big business is being placed right now. Some buyers say frankly they do not believe prices will go much if any higher and having waited so long they will wait a little longer. Others threaten to turn to coal, some have done so. The larger buyers want a price below the present market and in some cases they get them. The market at the refinery is now firm at $1.05 to $1.07½ and this is the best price buyers will pay regularly at any rate. There is some fuel oil bought early at less than the present market that is being offered to good cu-

(Continued on Page 110)

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(Continued on Page 110)

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HIGHER PRICES SEEM PROBABLE FOR EASTERN REFINED MARKET

By N. O. Fanning

NEW YORK, Nov. 24.—Although optimism pervades the eastern refined oil trade, leading factors are taking a cautious attitude. Fundamentally conditions have improved, but at this season of the year there does not appear to be tendency toward over-expansion. The trade hopes for higher prices before January 1, and in order to bring them they are willing to cut down production now.

Unusually favorable weather has boosted gasoline consumption so that there may be a heavy withdrawal from stocks in November. This will bring stocks down to a point where large additions will have to be made within four months if the 1925 seasonal demand is to be met without an unusual advance in quotations. Although higher prices will be welcomed by the industry, leaders are not anxious to create unfavorable sentiment toward the oil business and therefore will not encourage a runaway market. By curtailing overhead, eliminating waste as much as possible and pushing sales, the principal eastern factors in the oil trade hope to get the maximum profit without an untoward advance in quotations. In other words, the public will be able to obtain the maximum service at minimum price.

Prices Being Advanced

That there is a strong tendency in the eastern gasoline market is generally recognized. Several interests that were selling tank car gasoline at a rapid pace at prices 2 or 3 cents below the market here are now increasing their prices and their offerings are steadily becoming smaller, thus gradually eliminating that menace to the eastern gasoline price structure.

The Sinclair Refining Co. is said to be asking 10 cents per gallon for U. S. Motor gasoline (Mid-Continent) in tank car lots at New York, against 9¼ cents a couple of weeks ago. Local refiners will not sell spot gasoline for less than 12 cents per gallon and are not so ready to supply it as they were a month or two ago, being short themselves.

That the tank wagon structure will be raised 1 or 2 cents per gallon before another month has passed is quite generally agreed. Probably the advance will come before January 1, but any further increases will depend on conditions as they occur in the future.

There has been no change in the bearing of crude oil prices on the gasoline market, according to leading refiners, who say that higher crude oil will result inevitably in higher gasoline quotations. The word is going around here that an advance in the price of Mid-Continent crude is soon due. That will be another factor making toward higher gasoline quotations.

Statistically the position of the oil industry is not sound. That is to say, stocks are still too high, in the opinion of students of the situation. The reason that statistics alone do not give an adequate picture—in fact often mislead—lies in the fact that stocks are in strong hands, a situation statistics by fields do not indicate. Therefore, the conclusion can be arrived at that the actual situation in the oil business is better than the statistics would lead one to believe.

Kerosene Firm

Refiners report an improved domestic demand for kerosene and together with a larger export movement the price outlook for this product has changed for the better.

Gas and Fuel Oil

The fuel oil situation remains about as it has been for the last few weeks. Talk of higher prices is not believed justified, inasmuch as an unusually large amount of heavy oil and fuel oil has been moved to the eastern market during the last month. There is plenty of fuel oil to be had here, although the outlook for the future is not quite so promising. The unusually heavy demand for fuel oil for bunkering purposes and for use in land installations has been successfully met by local marketers, who are stocking up so that no unusual price increase will be required during the winter. There is no inclination to kill this business by boosting prices.

The rate at which new Diesel engined ships are being built, especially in foreign yards, gives rise here to expectations that the export demand for Diesel oil will be at a record within a few months. Thirty or more large vessels equipped with Diesel engines are under construction, and numerous smaller ones.

The problem of the oil industry, as eastern oil men see it, is to meet this prospective demand without undue price advances, which would immediately discourage consumption. One authority (not an oil man) makes the following statement, which shows what the oil business must do to conserve its fuel oil business:

"The very high thermal efficiency of the internal combustion engine, with a consequent great reduction in fuel bills, has a tendency to arouse enthusiasm which a careful study of all conditions does not entirely warrant. The vital point, it seems to me, is the question of the cost of fuel. All the authorities who discuss this subject of the available known sources of supply warn us that it is very far from inexhaustible. Some indeed, are so pessimistic as to talk of the exhaustion of oil within a comparatively short period, say two decades.

Supply of Fuel Oil

"The supplying of gasoline for motor transportation and other purposes is constantly increasing, and this is the part of the oil business which gives the greatest returns; consequently the part available for other purposes, including heavy oil for fuel, is constantly being reduced. The law of supply and demand certainly makes it plain that if steam motors were superseded by internal combustion motors the great demand for oil would make the price so high that the thermal economy of these motors would be more than offset by the cost of the fuel."

The statements quoted above are undoubtedly worthy of serious consideration. In order to meet the great potential demand for heavy oil, a large prospective supply must be constantly in view. Stocks of oil above ground must be higher with relation to the current demand than would have been considered economic one, two or three years ago. Large sources of supply must be in sight, awaiting to be tapped, with reasonable assurance that they will yield a large amount of oil.

Stocks now are larger than the oil industry has been used to carrying, but how much larger than is justified it is difficult to say. At any rate, the industry was never in a better position to supply fuel oil than it is at present.

The reason this has been discussed in so much detail is that there is constant propaganda to the effect that the price of fuel oil is going up in the near future, and this is undoubtedly discouraging consumption to some extent. On the contrary, every indication is that the price of fuel oil will go no higher this winter.

Lubricating Oils Strong

Eastern refiners have not yet met advances in lubricating oil prices which have been reported from the Pennsylvania and Gulf Coast districts. Nevertheless, the demand has improved to such an extent that an upturn is expected in the near future. Spindle oils are moving much more freely, and cylinder stocks are in strong demand also.

The motor vehicle demand for lubricants has held up much better than expected, but it is the "smoke-stack" or industrial demand which is looked upon as having the largest possibilities just at present. With business picking up, the lubricating oil market should undergo a big change for the better.

Export Outlook Bright

Heavy outgo of lubricating oils is the feature of the oil export trade at New York. Barrel shipments are particularly heavy, going largely to Europe, India

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and Africa. Paraffin wax is also moving on a large scale.

Barrel exports of lubricating oil during the week ended November 19 are computed at 1,146,474 gallons and case shipments at 171,000 gallons. Both items show a marked increase over the preceding week.

Bulk exports of lubricating oil are not running very large, but that is because this business is being handled largely from Gulf ports. The grade of lubricants exported from New York is higher, but not so much used, as that supplied from the Gulf. Incidentally, exported report shows a large movement of bulk lubricating oil from Gulf ports, with inquiries pouring in at a high rate.

Case shipments of kerosene during the week ended November 19 amounted to 4,302,490 gallons, a large gain over the week ended November 12. Bulk shipments fell off somewhat, but on the whole the kerosene export movement from New York is showing marked improvement.

Another feature of the export movement last week was that of the heavy exportation of petroleum asphalt, amounting to 6,089 bbls.

Petroleum Exports

The following table shows principal exports of petroleum and petroleum products from New York as reported during the past three weeks:

	Week ended—		
Gasoline—	Nov. 19	Nov. 12	Nov. 5
Bulk, Gals...	2,117,964	427,602	5,060,615
Cases, Gals.	1,811,020	2,632,220	360,000
Kerosene—			
Bulk, Gals.	1,034,475	6,154,490	1,845,167
Cases, Gals.	4,302,490	2,520,100	4,857,500
Lubricating oil—			
Bulk, Gals.	.....	1,063,312	.....
Barrels, Gals.	1,146,474	716,814	882,672
Cases, Gals.	171,000	39,670	88,950
Lubricating greases—			
Barrels, No.	657	.....	330
Paraffin wax—			
Pounds, No.	1,577,620	862,620	1,481,040
Barrels, No.	3,466	1,455	1,473
Petroleum asphalt—			
Barrels, No.	6,089	.....	520
Crude oil—			
Barrels, No.	6,046	2,596	3,358

New fixtures in the tanker chartering market were reported as follows:

Steamer Aritz Mendi (Span.), 2,403 tons net, December loading, Gulf to Rouen, France, refined oil, 27s. 6d.

Tanker Lanuvio (Ital.), 3,500 tons net, December loading, Gulf to Rouen, lubricating oil, at 29s.

Oil Receipts Decline

Receipts of crude and refined oil at Atlantic ports are estimated at 436,000 bbls. daily during the week ended November 19, against 480,000 bbls. the preceding week and 505,000 bbls. two weeks previous. Receipts from the Gulf averaged 216,000 bbls. daily, against 248,000 bbls. during the week ended November 12.

Imports, which have been holding up remarkably well, average 107,000 bbls. during the week ended November 19, against 130,000 bbls. the wek ended November 12 and 206,000 bbls. daily the week ended November 5.

Indications are that November receipts from the Gulf will show a decrease compared with October, that receipts from California will show a falling off, but that imports will show a big gain.

The explanation for the decrease in water shipments from the Gulf is that much of this oil can be moved by way of transcontinental pipe lines, which is considered a safer method during the period when weather conditions are not auspicious for ocean transportation, and the risk of loss is therefore greater.

Petroleum Receipts

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States and imports, for the last three weeks; also monthly record for the last 13 months (figures in barrels):

	Week ended—		
	Nov. 19	Nov. 12	Nov. 5
Gulf Coast	216,000	248,000	233,000
Pacific Coast	113,000	102,000	66,000
*Imports	107,000	130,000	206,000
Total	436,000	480,000	505,000

Daily Averages by Months	Gulf	Pacific	Imports	Total
1924—				
October	246,000	120,000	88,000	454,000
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,000	521,000
July	318,000	85,000	114,000	517,000
June	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	456,000
January	127,000	159,000	79,000	365,000
1923—				
December	184,000	153,000	119,000	456,000
November	186,000	141,000	110,000	437,000
October	200,000	164,000	133,000	497,000

CALIFORNIA FIELDS

(Continued from Page 41)

property the company is drilling ahead in Nos. 21, 26, 57 and 77, while rigs have been erected for five additional holes. The Victor Oil Co., in Section 35-32-23, finished well No. 11 at 1,970 feet and secured a 100-bbl. pumper, the oil testing 16.5 degrees and showing a cut of 3 per cent. The Chanslor-Canfield Midway Oil Co. added two new producers to its list by finishing Nos. 18 and 20 in Section 25-31-22. The former pumped 85 bbls. from 2,415 feet, while No. 20 made 190 bbls. on the beam from 2,140 feet. The oil in each case was of a rather low gravity, testing 15.6 degrees. The completion of these two holes leaves the company with but two drillers, No. 12 on this same lease at 2,210 feet and No. 31 in Section 9-32-23 at 2,804 feet.

The General Petroleum finished No. 6 Buena Vista, Section 32-21-24, at 3,934 feet and secured a 125-bbl. pumper, the oil being clean and testing 26.2 degrees. The Pacific Oil Co., the largest single operator in the field and the company having the greatest acreage, augmented its producing list by completing wells No. 40 in Section 3-32-24 and No. 34 in Section 5-32-24. The former pumped 100 bbls. of 25.1 gravity oil from 4,076 feet, while the latter made 150 bbls. of 26.1 gravity oil from 3,345 feet. The Pacific is credited with eight drillers in this field, but since the company erected ten rigs some time ago it is presumed that additional work is contemplated. Judging by the depths of the company's various drillers, several of them should appear in the completion list for the coming month. Bell Evans secured a 150-bbl. pumper in Section 35-32-23 and immediately started work on a new hole, No. 7, which at present shows a depth of 430 feet. The company's latest completion was No. 5, drilled to 1,750 feet and producing clean 16.6 gravity oil.

Elk Hills

There were six wells finished at Elk Hills during October good for 875 bbls. of new production. The Pan American was responsible for four of the six new wells added and 500 bbls. of the total new production. On lease A, Section 6-31-25, the company finished a 100-bbl. pumper, when No. 18 was put on the beam at 3,395 feet. No. 8 on lease B, Section 1-31-24, was good for 150 bbls. of 21.1 gravity oil from 3,125 feet. The company had a little better luck with well No. 11 on lease F, Section 2-31-24, and finished a 200-bbl. pumper. The oil, which tests 25.6 degrees and shows a cut of 3 per cent, is coming from 2,955 feet. No. 3 on lease G, Section 2-31-24, was the smallest of the company's quartet of new wells and, although it only pumped 50 bbls. a day upon completion, it was not a disappointment as this lease is only productive of comparatively small wells. The oil, which tests 24.8 degrees and shows a cut of 2 per cent, is coming from 3,020 feet. The completion of these four wells leaves the Pan-American with but two drillers, No. 6 in Section 1-31-24 and No. 12 in Section 34-30-24. The company has, however, erected two new rigs in the former section and three in the latter. The Pacific Oil Co.'s operations were productive of one new well, No. 77, in Section 25-30-24. It was a 100-bbl. pumper of 18.3 gravity oil from 2,965 feet. The company still has four drillers on this property, No. 6 at 2,950 feet, No. 8 at 2,930 feet, No. 91 at 2,900 feet, No. 103 at 2,976 feet and should, barring mechanical trouble, finish them within the course of the next few weeks. The Belridge Oil Co. finished well No. 9 in Section 34-30-24 and secured a 275-bbl. pumper from 2,930 feet, the oil testing 24.3 degrees and showing a cut of 3 per cent. No. 6 on this same lease looks like an early completion as it shows 2,850 feet of hole at present. The Standard did not finish any new wells during the month and, judging by the depths of

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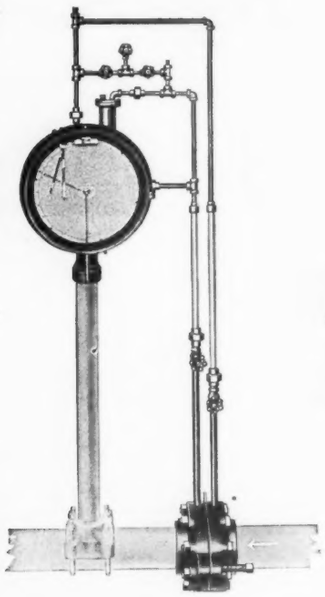

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the holes being drilled at present, will not do so for some time.

There was no improvement either in the McKittrick Field or the Lost Hills-Belridge area, there being practically no new work initiated during October. The only new work undertaken in the Wheeler Ridge district during the past 30 days was the erection of two new rigs by the General Petroleum in Section 28-11-20. There are six wells drilling in the field at present and 13 producers making a little better than 1,000 bbls. a day in the aggregate. The General Petroleum has two producers and one driller, No. 3 at 3,905 feet. The California Petroleum has one hole in Section 22-11-20 which is pretty badly junked and, because of its condition, has only a small chance of securing commercial production. The Standard has 11 producers, three drillers in Section 28-11-20 and one driller in Section 27-11-20. On the former property, the company staked locations for Nos. 16, 17 and 18 but will probably not undertake any new work until those holes now being drilled have been finished.

Miscellaneous Drilling

There was no change in the status of the wells being drilled at Rideout Heights and a general survey of conditions finds most operators quite pessimistic over the field's future. The production of the Chicksan Oil Co.'s No. 1 Bradford, finished at Richfield last week, has declined from 685 bbls. to 525 bbls. daily, there being no change in the gravity of the oil produced and only a slight improvement noted in the cut. The Newport Petroleum Corp. will attempt to solve the production problem at Newport by tunnelling into the side of a bluff and secure production by mining, if possible. This tar zone has never been pumped successfully and it should, therefore, be quite interesting to watch the outcome of the Newport's oil mine.

In the Inglewood area the Standard Oil Co. is abandoning No. 1 Farrell at 5,749 feet as a dry hole. No. 1 Potter-Smith shows 4,925 feet of hole, while No. 1 Stocker is going ahead at 2,200 feet. No. 1 on Los Angeles Investment lease No. 2 is drilling ahead at 4,420 feet, while No. 3 on Los Angeles Investment lease No. 1 is just getting under way at 700 feet. Neither the Pacific nor Pan American has started actual drilling on their respective tests. The Mohawk secured a very satisfactory showing in its hole at 2,210 feet and, although the formation predominating was a sandy shale, it was streaked at times with oil sand.

The Manhattan Pacific Oil Co. at Hermosa is drilling in a sandy shale at 2,400 feet, the formation being a sandy shale. The Associated has reached a depth of 5,930 feet in No. 1 McNally at La Mirada, while the Standard is drilling ahead in No. 1 Culp at Los Nietos, a few miles away, at 5,100 feet. The Superior's two North Whittier Heights wells are going ahead slowly, No. 1-A showing 3,620 feet of hole and and No. 1 Andreas, 1,100 feet. The Birch Oil Co. is abandoning the old Santa Monica Sawtelle well, drilled to 4,587 feet, as a dry hole, following production tests of both upper and lower showings. At Seal Beach, the Shell shows 5,235 feet of hole in No. 1 Bixby and 2,665 feet in No. 2 Bryant. The Standard did not make any progress in its two tests at San Emidio, as No. 1 in Section 28-11-22 is still held up with a fishing job at 2,820 feet, while No. 1 in Section 5-10-22 is suspended at 475 feet. The General Petroleum is drilling ahead at 2,745 feet in its Commanche Point test in Section 31-12-18, the formation being a hard sand.

Lost Hills Wildcat

The Standard's Lost Hills wildcat in Section 5-27-20 is just getting under way at 2,950 feet. The Union's Rio Bravo wildcat, Section 4-29-25, is beginning to look somewhat doubtful, since it has reached a depth of 4,365 feet. The Pan American's hole in Section 13-29-29, on the Kern River Bluffs, south of Bakersfield, is still full of pipe and as a result, no additional footage was made. The St. Helens is going ahead at 2,800 feet in Section 14-29-28, while the Central in Section 36-28-28 is considering the advisability of testing the showing found at 2,486 feet. Since E. J. Miley's No. 1 Kreyenhagen, on Jacalitos Dome near Coalinga, Section 7-22-16, is held up because of a fishing job, the Snowolene's test in Section 22-21-15 will occupy the limelight temporarily at least. The latter's wildcat is drilling ahead in a hard sand at 3,547 feet, the only hope for production being a deep drilling.

The General Petroleum encountered considerable gas in its Kettleman Hills test at 5,418 feet and, although the gas forced out sand, mud and water, there was no oil present. The well's blowout from this depth has renewed enthusiasm and the company hopes to secure oil with a little more hole. Hugh McPhail has suspended operations in Section 13-24-18 at 1,500 feet. The Associated, in Section 13-23-18, and the Marland, in Section 12-21-17, are both standing idle following technical spuds. The Bolsa Chica, in 30-23-19, will convert its first hole at 680 feet into a water well and spud in a new test for oil. The Oakridge Oil Co.'s No. 1 Mahoney in San Luis Obispo County, Section 4-25-12, is going ahead at 2,750 feet, the formation being a blue shale. E. J. Miley's No. 1 Smith in Section 22-21-12 has been temporarily suspended at 1,250 feet. None of the various tests in Monterey, San Mateo, San Joaquin, Sacramento, Santa Clara, Alamita or Napa Counties showed anything of interest during the week.

Field Operations

Oil field operations reported to the State Oil and Gas Supervisor show 16 new wells started, compared with 17 during the previous week, bringing the total for the current year to 1,229, compared with 1,267 at the same time last year. Of the 16 notices to drill filed this week, 2 were for wells in the Newport area, 2 at Dominguez, 2 at Long Beach, 1 each at Rosecrans, Torrance and Richfield, 3 in Ventura County, 3 in the fields of Kern County and 1 in Kings County. There were 20 water tests made, compared with 23 during the preceding week. Deepening, or redrilling jobs totaled 13, 9 less than during the period just previous. There were 5 holes abandoned, bringing the total for this year to 391, compared with 254 at the same time last year. Permits were issued for the following new wells:

Torrance
Location, Company, Well—
Superior Oil Co.—
19-4-13 Torrance 52.
Long Beach
R. M. Cook—
29-4-12 Hall Weber 3.
28-4-12 W. R. Ramsey B-5.
Dominguez
Associated Oil Co.—
34-3-13 DeFrancis 6.
Shell Co.—
34-3-13 Manuel 4.
Rosecrans
General Pet. Corp.—
18-3-13 Vaughn 2.
Newport
29-6-10 A. J. Delaney 2.
29-6-10 A. J. Delaney 3.
Richfield
General Pet. Corp.—
28-3- 9 Thompson 6.
Ventura County
Acme Pet. Corp. and Cal-Mex Oil & Ref. Co.—
2-3-19 Frey 1.
Associated Oil Co.—
27-3-23 Lloyd 17.
R. F. Labonge—
1-4-20 Kentucky 12.
Midway-Sunset
22-31-22 C. C. M. O. Co. 34.
Standard Oil Co.—
2-11-24 Monarch 43.
Elk Hills
Standard Oil Co.—
36-30-24 Tupman 43.
Kings County
18-23-19 George W. Shearer 1.

Abandonment notices were filed on the following holes:

Torrance
George F. Getty, Inc.—
14-4-14 Torrance 11.
Santa Fe Springs
Union Oil Co.—
5- 3-11 Meyer 7
Los Angeles County
8- 3-14 McFadden, McDowell & Bering 1.
Coalinga
25-20-14 Pacific Oil Co. 45.

CALIFORNIA'S NEW BUILDING

Standard Oil Co. of California has moved into its new home, an eight-story office building at Tenth and Hope Streets, Los Angeles, erected at approximate cost of $1,500,000.

BAKU OIL OUTPUT GAINS

Baku oil output for October was 24,000,000 poods against 21,500,000 poods in September (8⅓ poods equal 1 bbl.).

Reid Reverse Clutch

SEVENTEEN YEARS OF SATISFACTION

Ohio electric steel gears and pinions shown above have done their part toward the internationally known reliability of Reid reverse clutches. These gears and pinions must stand a heavy strain when pulling 2000 or 3000 feet of sucker rods, tubing or casing and in handling a string of cleaning-out or drilling tools. Frequently this work is done in a rush and the gears are often shifted into reverse before the forward motion of the pulley has stopped, resulting in a strain much the same as reversing the gears in an automobile while going forward.

That the tough, close-grained Ohio electric steel stands this strain and wear is evidenced by the fact the Joseph Reid Gas Engine Company has used many carloads during the last seventeen years. All were of uniform size and weight and with well-formed teeth like the ones shown above.

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The Ohio Steel Foundry Co.
Springfield, Ohio

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LEASES—PRODUCTION

POTTAWATOMIE and Seminole County acreage. B. H. Rowlett and Company, Tecumseh, Okla.

NORTH TEXAS

Shallow field leases, including offsets, at low prices. Offsets to producing leases in Archer County have sold as high as $900 cash per acre. Chance for excellent profits. Write for maps and prices. P. R. MacIntosh, 215 Neil P. Anderson Bldg., Fort Worth, Tex.

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$3.00 AN ACRE

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We also have leases along Marathon Fold and Balcones Fault from 10 cents an acre up. Here are a few of them:

Reagan County .....$3.50 an acre
Pecos County ..... 1.00 an acre
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Upton County ..... 1.00 an acre
Gillespie County .... .10 an acre
30 other counties.

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292 Bedell Bldg., San Antonio, Texas

OIL AND GAS LEASES
On Marathon Fold

20,000 acres, new 20-year, 88 Form lease; Pecos County; 10 cents rental.

18,000 acres, University permits, dated October 1, 1924, joining University permits of Sun Oil Co. and Gulf Production Co. Transcontinental now drilling and three more well to start. Price reasonable.

20,000 acres 10-year leases, Crockett County; large and small blocks.

5,000 acres 10-year lease; close to drilling wells; Reagan County.

3,200 acres University permits, Reagan County; close to Big Lake Oil Co. and Texon Oil & Land Co. producing wells. Want drilling contract.

3,000 acres 10-year lease, Upton County; near drilling well and joining leading company holdings. Prices and maps on request.

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Fort Worth, Texas

HALF SECTION southern Lincoln County, Colorado, land for sale at a bargain. Write C. W. Cruse, Box 654, Barnsdall, Okla.

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OIL LEASES—Close in, Reagan County Field, 5 to 5,000 acres; drilling contracts. See us first. First State Bank Building, Big Lage, Texas. Standard Development Co., Big Lake, Texas.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

OIL AND GAS propositions, shallow drilling, new section in Pennsylvania. Box A-480, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PRODUCTION

LIVE OAK and McMullen Counties, South Texas; recognized by the leading oil men and geologists as the next big oil field of Texas. Commercial leases; large and small tracts, 10 acres up. On structure; wells drilling on all sides. Practically all the big companies in this field. Prices low. Titles guaranteed. Buy now. Gulf Leasing Co., 525 Brady Building, San Antonio, Texas.

FOR SALE

A 15-acre producing lease at High Island, Texas. One well came in at 250 bbls., now producing about 10 bbls. Grade "A" Coastal; depth 149 feet.

Equipment consists of two derricks, one gasoline rotary rig, completed; 1½ miles pipe line to loading rack; three pumping engines, casing and tubing; 8,000 bbls. of new Parkersburg steel storage tanks; 1,300 bbls. of crude in tanks goes with lease. Price on application.

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PRODUCTION—Large or small; drilling acreage, leases, royalties. Make specialty of fee acreage. Large acquaintance in Wichita, Clay, Baylor, Archer, and Wilbarger Counties. Stehlik & Baber, Kemp Hotel, Box 467, Wichita Falls, Texas.

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ONLY TRACT Not Leased, near Jim Hogg County, Texas, gusher; 9,400 acres in fee; all good pasture, citrus fruit and agricultural land; fenced; ranch improvements; good water 60 to 100 feet; proven oil and gas on three sides. Price $10 per acre. Smith & Smith, San Antonio, Texas.

LEASES—PRODUCTION

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"Buy from the owner"

Owner will sell one-half perpetual royalty on lands located in active territory, between two drilling wells. Twenty acres or more price $2.50 per acre. Terms if desired. Address "Owner," P. O. Box 1036, Fort Worth, Texas.

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to develop oil leases in
Calcasieu and Jeff Davis
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SOUTHEAST New Mexico is having real boom; many new wells starting; big opportunities for investors; write for leases prices and map. Orcutt-Harris & Co., Colcord Bldg., Oklahoma City, Okla.

LEASES and drilling contracts proven and semiproven; 40 acres to 10,000 acres; Hutchinson County, Texas.

R. P. O'GRADY
Suite 2 Old Post Office Bldg.
Amarillo, Texas

Greetings

The Classified Wants Section sincerely wishes you and every reader of The Oil and Gas Journal a real old fashioned

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FOR SALE—20,000 acres close in oil and gas leases located in northeast Greenup County, Kentucky. Guarantee three wells to be drilled immediately. Berea grit sand, 350-500 feet, Ashland gas sand, 1,100-1,200 feet; Corniferous, 1,500-1,600 feet underlies this area. Berea grit 4 miles north has produced for 30 years; Ashland gas sand producing on southeast; show of oil and gas in Berea grit, 1½ miles northwest; no dry holes; favorable geological report; titles and acreage guaranteed to amount to purchase price; prices reasonable. P. C. Matthews, 304 Fayette Bank Bldg., Lexington, Ky.

SALESMEN

I own one-half perpetual royalty covering large block of lands near drilling operations. Will sell this property in small tracts, on easy payments, at very attractive price, and pay you a liberal commission. Write me for details. Owner, Box 283, San Antonio, Tex.

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FOR SALE—Protection acreage on Manning Dome offsetting holdings of Arkansas Fuel Oil Co. and the Ohio Oil Co. Guaranteed to be on structure. Price $3 to $5 per acre. W. H. McCullough, Roswell, N. M.

LEASES—PRODUCTION

10,000 ACRES free leases, famous Scuna Valley Basin, Mississippi, for core drilled well. $20,000 required guarantee drilling; best geology. W. C. Brooks, Memphis, Tenn.

FOR SALE—Small acreage with 100-bbl. daily production of light oil, with complete pumping equipment in Louann district, Arkansas. Apply Williams, 506 Kittredge Bldg., Denver, Colo.

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In both the northwestern and southeastern fields. Some as low as 25 cents per acre. For maps and particulars, address

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Sapulpa, Okla.

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New five-year commercial lease in Wewoka Field, SE quarter NE quarter, 8-8-7. Look this location up and make your bid to W. C. Donegan, Amarillo, Texas.

I OWN LEASE ¾ mile from Bloomfield shallow producers in San Juan Basin. Will pay freight, casing, grubstake and give interest for drilling. Write or wire at once giving size of machine and condition of equipment. Chas. E. Parrott, Aztec, New Mexico.

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AT A BARGAIN PRICE—2,400 feet of 6⅝-inch well casing, 27 lbs. per foot; 120 feet 8⅝-inch well casing; 60 feet of 12¾-inch, and 2,200 feet of tubing and rods; 100-bbl. tank; 600 feet of line pipe. Woking barrel, casing head, standard derrick complete. Will price f.o.b. car, Liberty Center, Ohio. Write C. R. Ulrich Co., 736 Nicholas Building, Toledo, Ohio.

FOR SALE

5-inch extra heavy
new steel pipe
(National Tube make)
at very attractive prices
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FOR SALE—No. 24 Star steam traction drilling machine; fully equipped for 1,200-foot drilling; A-1 condition; bargain. Must be sold. W. W. Wampler, Webb City, Mo.

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We offer the following used gas line pipe for sale:

3 miles 3-inch
15 miles 6-inch
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5 miles 14-inch

Write us for prices.

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25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

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A-1 second-hand; threads and collars guaranteed. 5,000 ft. 12½ inch 50 lb. and 5,000 ft. 10 inch 35 and 40 lb. Also other sizes and weights. Write us.
SHEFTS SUPPLY
Morris, Okla.

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Eleven De Laval Steam Driven Oil Separators—Type 601

These machines are in first class condition and have copper lined bowls and copper Tinware.

This is a real Bargain

Communicate with

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Wilcox Building Phone 8231

Tulsa, Okla.

FOR SALE—EQUIPMENT

FILLING STATION equipment to trade for drilling machine of 1,000 to 2,000-foot capacity. Box 519, Amarillo, Texas.

FOR SALE steam locomotive 18x24 10 wheel type, standard gauge, air brake, electric headlight, good boiler, weight engine and tender 50 tons. Suitable for switching, refinery or other industrial uses. Price $3,000. J. R. Edmonds, 168 N. Vancouver, Phone 8024, Tulsa, Okla.

FOR SALE—150 feet of 70-pound 15½-inch; 1,000 feet 40-pound 10-inch; 2,700 feet 8¼-inch 32-pound 8-thread and 3,400 feet of new 24-pound 6¼1-inch 10-thread J. & L. Woodlawn. Special casing; 100,000 feet of 2-inch line; 20,000 feet of 2-inch tubing and rods; also excellent powers, engines, tanks and other equipment. J. F. Arnold Co., Decatur, Ind.

FOR SALE—25 h. p. type Y oil engine, equipped with Weber Clutch, $450 f.o.b. cars. Will purchase 60 to 100 h.p. oil engine; state price and condition. Oklahoma High Line Construction Co., 508 Mayo Bldg., Tulsa, Okla.

POSITION WANTED

ELECTRICAL Engineer, throughly experienced in design of electrical equipment in refinery, desires position in Tulsa; best reference; formerly with Sinclair. Box A-481, The Oil and Gas Journal, Tulsa, Okla.

LIGHT OIL MAN—Refinery man with 10 years' experience, from loading rack to general superintendent, wants good connection. Practical man. Address Box A-400, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

EXECUTIVES, ENGINEERS, now earning $3,000-$25,000 will find our individual, confidential service a dignified and effective medium to make desired connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Jacob Penn, Inc., 305 Broadway, New York City, N. Y.

WANTED

WANTED—Producing royalties. Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

Muskogee, Okla.
Nov. 21, 1924.

Classified Wants Dept.,
The Oil and Gas Journal,
Tulsa, Okla.
Dear Sir:

Please discontinue my "Tank Table" advertisement until further notice.

I am compelled to take this step because the advertisement has brought me more work than I can attend to.

Yours very truly,
H. F. HEYDRICK.

WANTED

WANTED—Second-hand line pipe and casing for spot cash. Phone or write Jay Kornfeld, 1338 South Owasso, Tulsa, Okla., Phone 5411.

BUSINESS OPPORTUNITY

FOR SALE—One Booster Station complete with building, A-1 condition, $800; one loading rack pump, A-1 condition, $300. Box 82 or phone 105, Morris, Okla.

ERNEST F. GARDNER A-511 Ridge Arcade, Kansas City, Mo. Nationally known writer of powerful, convincing advertisements, letters, circulars, booklets. Twenty years' experience. Submit your problem for free suggestions.

CAPITAL—United States and Canadian, can be quickly reached through brokers, bank managers and salesmen. Valuable information upon request. Amster Leonard, First Natl. Bank Bldg., Chicago, Ill.

FOR SALE

Best trackage property in Springfield—1½ acres centrally located—on paved street; suitable for manufacturing, or wholesale oil distributing station. J. Blaine Berry, 705 E. Brower St., Springfield, Mo.

CORE DRILL your structure with diamond drills and reduce the hazard of wildcatting. Let us help your geologist correlate structure before you put cable tools at work. The cost is relatively small and the possible saving enormous. On well located tracts we will accept acreage in lieu of profits. Drilling Corporation of America, George H. St. Clair, General Manager, 205 Cosden Bldg., Tulsa, Okla. Phone 3-9031.

FOR SALE—An unincumbered Indiana charter for $500,000; exempt from Blue Sky laws. Will sell or combine with leases and production. Address Tico, Box 179, Peru, Indiana.

BUSINESS OPPORTUNITIES

If you have oil interests in the southwest and want to connect with a firm of experienced drillers and oil operators qualified to handle every angle of development from leasing to completion; who can get the maximum results from minimum expenditure, or if you contemplate becoming interested in the oil business, we want to get in touch with you. Can furnish the best reference as to ability, honesty and integrity and can deliver the goods. The purpose of this ad is to make a legitimate connection with someone who means business and can successfully finance us. Address P. O. Box 1427, Wichita Falls, Texas.

ADVERTISING RATES

The cost of advertising in the Classified Wants Section is very reasonable. It costs 25 cents a line for the first insertion and 15 cents a line for each following insertion. Six words usually make a line. Cash with the order, please.

Use this table to figure the cost of advertising in the Classified Section. Keep it for reference:

	One Time	Two Times	Three Times	One Month
3 lines..	$ .75	$1.20	$1.65	$2.10
4 lines..	1.00	1.60	2.20	2.80
5 lines..	1.25	2.00	2.75	3.50
6 lines..	1.50	2.40	3.30	4.20
7 lines..	1.75	2.80	3.85	4.90
8 lines..	2.00	3.20	4.40	5.60
9 lines..	2.25	3.60	4.95	6.30
10 lines..	2.50	4.00	5.50	7.00

BESSEMER Gas Engines, 15- to 165-h.p., other makes 300-h.p. Oil and gas and steam engines, compressors, generators, complete gasoline plants. R. W. Russell, St. Marys, W. Va.

FOR SALE—High-powered stump puller. Box 107, Chickasha, Okla.

Watch this space from time to time for real bargains.

STEEL BUILDING
For Sale

One (1) Blaw-Knox Prodential type steel building 110 feet wide, 130 feet long, made of two bays, one 60 feet wide by 16 feet high, the other 50 feet wide by 12 feet high; complete with steel siding, roofing, sash, windows, doors, skylights, etc. This building is of the bolted sectional type, therefore, can be easily dismantled and re-erected with bolts. It has only been used about three years and is practically new.

We are offering it at a real bargain price.

JOS. GREENSPON'S SONS IRON & STEEL CO
Department O St. Louis, Mo.

POSITION WANTED

MARRIED MAN—Age 32, with sales record over last two years of over three-quarters of a million dollars worth of refined products desires connection with growing concern where results mean reward. Will consider any offer, anywhere, that is attractive. Box A-500, The Oil and Gas Journal, Tulsa, Okla.

WANTED—To get in touch with a good leaser in each oil producing State in the Union. Write C. L. W., 969-B Union Trust Bldg., Pittsburgh, Pa.

WANTED—Drilling blocks on approved geology; Oklahoma and Kansas preferred. Box A-482, The Oil and Gas Journal, Tulsa, Okla.

WANTED by old established concern, an issue of stock to sell. Companies incorporated and financed. Address, "Issue," Room 414, 63 Park Row, New York, N. Y.

WANTED—Information regarding zinc, lead, antimony, bauxite, gold and silver deposits in Oklahoma and Texas. Box A-463, The Oil and Gas Journal, Tulsa, Okla.

WANTED small natural gas plant, or might consider piping wells to market. Box A-461, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Blocks or offset acreage on structure. Must stand close investigation and will deal only with principals. Submit maps and all data. Box A-460, The Oil and Gas Journal, Tulsa, Okla.

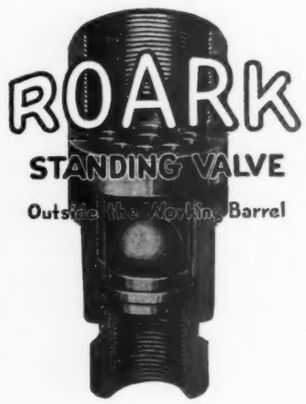
STOCK SELLING

Stock-selling campaigns planned and executed by an expert; every detail handled quickly, economically and effectively; established reputation.
WILLIAM R. THURSTON
33 West 42nd Street
New York City, N. Y.

Form your own company or incorporate with others, and colonize rich, low-priced agricultural land in
MEXICO
Investment safe; profit attractive; large capital not necessary. I make the building of a community a success by handling intelligently Agricultural Surveys, Soil Surveys, Production Surveys, Marketing Surveys; Purchasing, Financing and Colonizing Methods; Community Planning and Development Work. Industrial Engineer, Box 1064, El Paso, Texas.

(Additional Classified Wants on Page 111)

What a Prominent Petroleum Engineer Says of the



In a private conversation with publisher friends a celebrated petroleum engineer—employed by one of the biggest producers—gave his opinion on standing valves.

The designer of the ROARK Valve, in his opinion, was the first man in oil history to give this important subject the scientific study it deserves.

The ROARK VALVE he described as the most important improvement ever made in standing valve design. Combating the B. S. and cut oil problems, lengthening the pump stroke, increasing capacity and eliminating cups and leather rings, it introduces advantages never known before.

You will never experience the highest type of valve service until you give the ROARK a trial. Use it once and we assure you you'll never use anything else. At your supply house or direct.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended November 15 totaled 672,000 bbls., a daily average of 96,000 bbls., against 640,000 bbls., a daily average of 91,429 bbls. for the week ended November 8.

	Wk. End. Nov. 15
At Atlantic Coast ports—	
Baltimore	180,000
New York	387,000
Philadelphia	105,000
Total	672,000
Daily average	96,000
Total Atlantic and Gulf Coast ports	672,000
Daily average	96,000

According to figures collected by the American Petroleum Institute imports of crude and refined oils at the principal ports for the week ended November 15 totaled 1,893,000 bbls., a daily average of 270,428 bbls., compared with 2,016,000 bbls., a daily average of 288,000 bbls. for the week ended November 8.

	Wk. End. Nov. 15
At Atlantic Coast ports—	
Baltimore	310,000
New York	378,000
Philadelphia	110,000
Others	181,000
Total	979,000
Daily average	139,857
At Gulf Coast ports—	
Galveston district	407,000
New Orleans and Baton Rouge	343,000
Port Arthur and Sabine district	144,000
Tampa	20,000
Total	914,000
Daily average	130,571
At all U. S. ports—	
Total	1,893,000
Daily average	270,428

CANADIAN FIELDS

(Continued from Page 38)

lake front, has finished in the Tilbury sand as a small gasser. It will probably make around 200,000 feet a day. The drillers have moved to the back of the Carr farm where No. 254, also a test of the Tilbury sand, has been started.

The Regal Oil Corp. of Toronto, is reported to be planning to open up and shoot a number of the old producing wells in the Petrolia and Oil Springs Fields.

In North Toronto an old gas well, which some 14 years ago developed a small production and has since been capped, is being opened up and put in shape for production. The well, drilled in 1910, in Sherwood Park, encountered gas in the search for water, and the gas was used to run the North Toronto pumping station for a couple of years and has since been shut in. It will now be used to heat water for a municipal bathing pool; and some additional drilling may be undertaken by the municipality.

In the Niagara district, the Provincial Natural Gas & Fuel Co. is arranging to supplement its natural gas supply from the Welland and Haldimand Fields with a mixture of manufactured and natural gas piped across the river from Buffalo. Pipes have been laid across the Niagara River and the mixture will be delivered to consumers about December 1.

It is reported that the Western Kentucky Coal & Oil Co. has commenced the construction of a small steel and concrete refining plant at Southampton, in Bruce County, where a 50-acre site has been secured; and will lay a pipe line from the plant to the lake shore.

Royalite Still Burning

In the Canadian West, an Imperial Oil, Ltd. crew is reported endeavoring to extinguish the burning Royalite No. 4 gasser in the Okotoks Field with a battery of steam boilers. The well has been burning since Nov. 9, with 20,000 feet of gas a day blowing wide open.

In the Irma-Wainwright Field, east central Alberta, drilling operations have been handicapped by severe cold weather; and several production tests have been postponed till the weather moderates. British Petroleum's No. 4 shows increasing gas pressure, a recent test indicating 225 lbs. to the square inch, and may develop a flowing well; it is, in fact, flowing a little oil right along, and has filled a 200-bbl. tank. Pumps have been installed in British Petroleum's No. 2, Section 30-46-6w-4. Maple Leaf Oil & Gas Co. No. 1, Section 24-45-8w-4 is installing a flow line. British Petroleum's No. 3 is still waiting for the cement to set before drilling into the sand. Western Consolidated Oils, Ltd., Section 20-45-6w-4 is reported to have resumed drilling, after several weeks' shutdown waiting for casing. Wainwright Oil Producers Syndicate, Section 36-44-7w-4 is drilling.

Distillate Burner

The Alberta Refining Co. of Coutts, Alta. has commenced the manufacture of a stove distillate for household use for heating and cooking; and is also marketing a burner specially designed to use this low grade distillate for fuel. The burner, which is the invention of L. R. Olson, president of the Alberta Refining Co., is being manufactured by the Lethbridge Iron Works at Lethbridge, Alta. Gas is generated in the gas generator chamber of the burner and the air supplied to the flame is heated air, instead of cold air as in the ordinary burner.

The Northwestern Utilities, Ltd., supplying Edmonton and other points in Central Alberta from the Viking gas fields, has completed its first year's business in Edmonton. Figures given out show that while at the end of March there were only 2,454 consumers connected up with the mains, 375 of whom were in the towns of Tofield, Holden, Viking and Bruce, a total of 4,567 consumers are now being supplied. The maximum daily consumption of gas the first winter was on January 7, 1924, when 2,232,463 feet of gas was delivered, the temperature being 17 degrees below. On November 11 of this year, with approximately the same temperature, the consumption was 7,347,000 feet. It has only been necessary for the company to draw in three of the Viking wells to meet this demand, and with a further 10 wells to draw from, no anxiety is felt regarding supply and pressure.

NORTH CENTRAL TEXAS

(Continued from Page 38)

others' No. 2 Scott & Ramsdell, will test sand at 1,200 feet; Somers and others' No. 1 Parker, drilling at 1,200 feet.

Montague County: Boyd Oil Co.'s No. 1 Salmon, showing oil at 900 feet; Guarantee Fund Oil Co.'s No. 1 Jordan, drilling in black shale at 3,375 feet; Petroleum Producers Co.'s No. 1 Howard, drilling at 710 feet; Texhoma Oil & Refining Co.'s No. 1 Cato, drilling in white sands at 1,760 feet; The Texas Co.'s No. 2-A Gist, resetting casing at 915 feet.

Cooke County: Big Indian Oil & Development Co.'s No. 1 Davis, bailing at 3,527 feet.

Throckmorton County: Hamilton and others' No. 1 Odell, drilling at 1,460 feet; King and others' No. 1 Broyles, fishing at 920 feet; Larkin and others' No. 1 Conger, resetting liner at 1,430 feet; same company's No. 1 Richards, drilling at 960 feet; Shamrock Oil Co.'s No. 1 McKnight, drilling at 2,800 feet; Whatley and others' No. 1 Parrott, fishing at 800 feet.

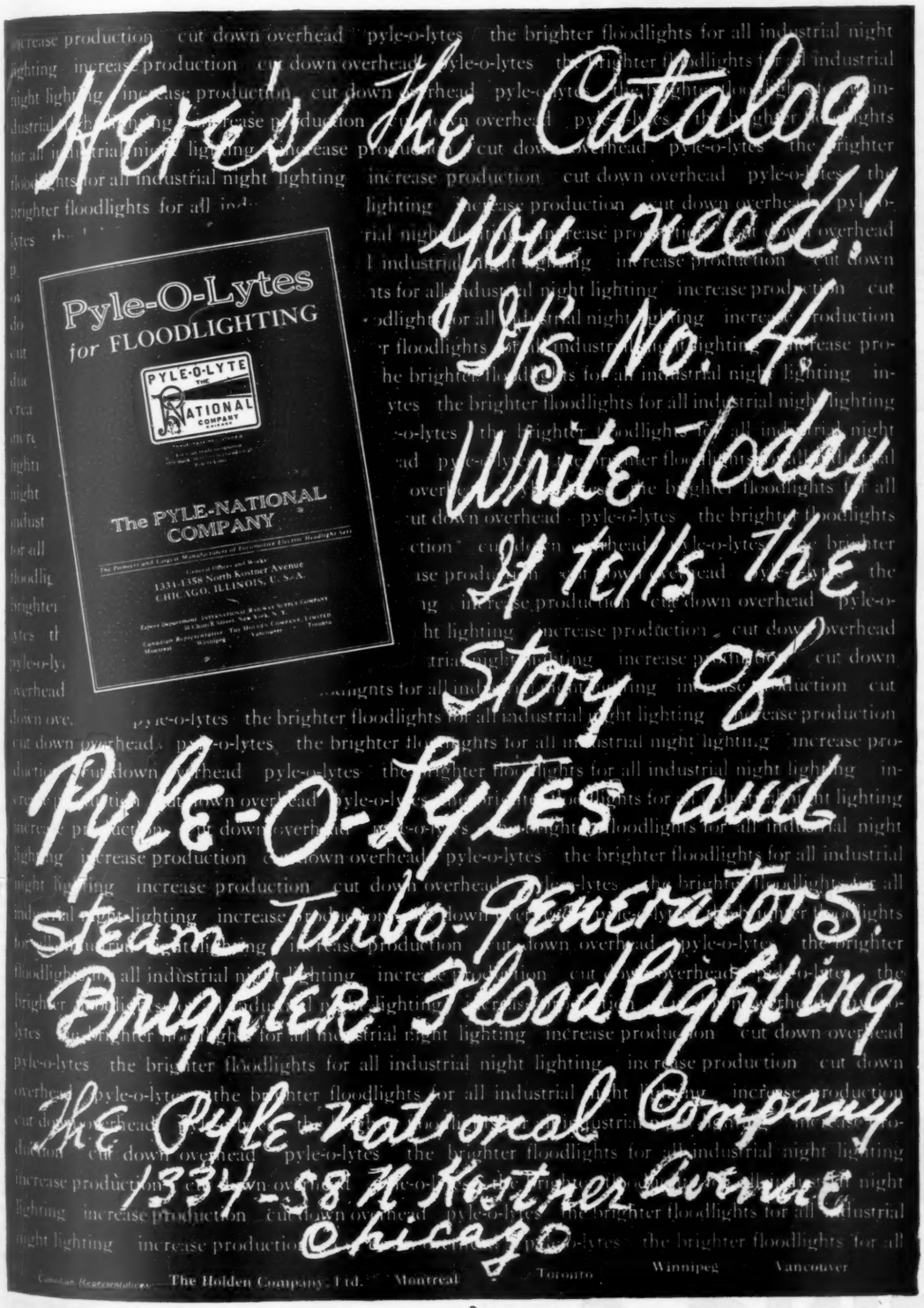
Palo Pinto County: Hughes and others' No. 1 Belding, drilling at 2,380 feet; same company's No. 2 Weldon, drilling at 2,520 feet; Phillips and others' No. 1 Stringer, drilling at 1,115 feet; Pender Production Co.'s No. 2 Siemmons, drilling at 2,450 feet.

Callahan County: Byron Union Oil Co.'s No. 1 Hennessey, drilling at 4,275 feet; Kellogg Drilling Co.'s No. 1 Snyder, running casing at 2,460 feet; Pope and others' No. 4 Bryson, fishing for bailer at 2,060 feet; Prewitt and others' No. 1 George T. Crane, drilling at 1,200 feet; same company's No. 2 George T. Crane, drilling at 200 feet; same company's No. 1 W. W. Crane, drilling at 1,275 feet; same company's No. 1 Windham, drilling at 1,435 feet.

Mitchell County: Eddleman and others' No. 1 Gist, drilling by tools at 2,850 feet; Humphreys and others' No. 1 Coleman, will shoot at 3,170 feet; California Co.'s No. 1 Clark, bailing water at 1,540 feet; same company's No. 5 Miller, drilling at 1,800 feet; same company's No. 7 Abrams, drilling at 2,350 feet; Morrison and others' No. 1 Reynolds

BEFORE YOU INSTALL FLOODLIGHTING EQUIPMENT—

Get All the Information About Pyle-National Units



STEAM TURBO-GENERATORS

Pyle National Steam Turbo-Generators are made in five types—Capacities ranging from 500 watts to 7½ K. W. Steam Consumption less than that of any other turbo-generator of equal size and capacity.

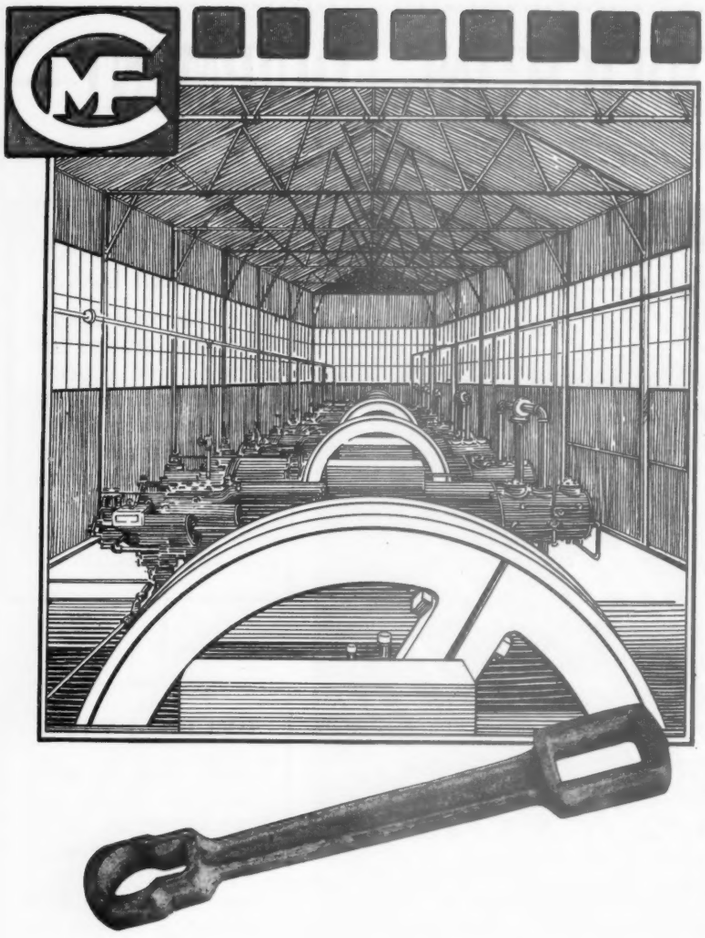
PYLE-O-LYTES

You'll find a wide range of types and sizes for every floodlighting requirement. Cases built of long-lived cast aluminum alloy that resists the action of all deteriorating agents, and will outwear the ordinary sheet metal units.

PAINTING IS ENTIRELY ELIMINATED BECAUSE WHOLLY UNNECESSARY

There are no defects of material or workmanship to be covered up by paint—all parts which are not cast aluminum or bronze are "Parkerized" to protect the metal against oxidation.

They'll Save You Money in Less Current, Less Maintenance—and Give More Light



One by one leading manufacturers are using drop forged parts for the load bearing and strain resisting parts of their products. The tough give and take strength of forged steel offers no element of chance break downs, but affords reserve stamina for emergency loads and hard pulls.

Buy on the basis of performance and endurance and you'll buy at a profit. Champion Engineers help manufacturers of oil field equipment build more dependable products.

THE CHAMPION MACHINE & FORGING CO.
3695 East 78th Street Cleveland, Ohio
New York Office—30 Church St.
Philadelphia Office—Bourse Bldg.
Detroit Office—705 Ford Bldg.

CHAMPION DROP FORGINGS

showing oil at 2,980 feet; Sloan and others' No. 3 Miller, drilling at 100 feet.

Sterling County: Cooperative Lease & Development Co.'s No. 1 Douthit, drilling by tools at 1,820 feet; Chicago Texas Oil & Gas Syndicate's No. 2 Durham, showing oil at 1,405 feet; Fidelity Oil Co.'s No. 1 Hull, cleaning out at 1,705 feet; Ford and others' No. 1 Foster, drilling at 400 feet.

Brown County: Anderson and others' No. 1 Wheeler, will shoot at 2,790 feet; Gully and others' No. 1 Cox, drilling at 2,000 feet; Honea and others' No. 2 De Busk, drilling at 2,320 feet; Moore and others' No. 1 Williams, drilling at 900 feet; New Era Oil Syndicate's No. 3 Prather, drilling at 465 feet; Stone and others' No. 1 Gunn, will test at 1,205 feet.

Irion County: Orient Oil Co.'s No. 1 Suggs, drilling at 1,250 feet.

Reagan County

Arkansas Fuel Oil Co.'s No. 1 University, drilling at 2,960 feet; Big Lake Oil Co.'s No. 13 University, drilling at 2,715 feet; same company's No. 14 University, drilling at 2,465 feet; same company's No. 15 University, drilling at 2,500 feet; California Co.'s No. 1 University, drilling at 750 feet; Crockett Drilling Syndicate's No. 1 University, drilling at 2,790 feet; Mid-Kansas Oil Co.'s No. 1 Hughes & Mason, drilling at 120 feet; Texon Oil & Land Co.'s No. 2 Group 1 University, drilling at 3,040 feet; same company's No. 3 Group 1, drilling at 515 feet; Transcontinental Oil Co.'s No. 1 University, drilling at 1,550 feet; University Oil Co.'s No. 1 University, drilling at 810 feet.

Pecos County: Arkansas Fuel Oil Co.'s No. 1 Blackstone, spudding; Transcontinental Oil Co.'s No. 1 Sherbino, drilling at 550 feet; Trans Pecos Oil Co.'s No. 1 Thomas, fishing at 1,835 feet.

Crockett County: World Oil Co.'s No. 1 Powell, drilling at 1,265 feet.

Val Verde County: Hodges and others' No. 1 Harrison, drilling at 1,005 feet, Rio Bravo Oil Co.'s No. 2 Moore, drilling at 1,150 feet.

PRODUCTION REPORT

Week Ending November 12, 1924

Burkburnett		
Barkley & Meadows	1,030	
Humble Oil & Ref. Co.	460	
Gulf Production Co.	810	
Magnolia Petroleum Co.	3,005	
McMahon Oil Co.	320	
Panhandle Oil & Ref. Co.	370	
Prairie Oil & Gas Co.	25	
Sinclair Oil & Gas Co.	75	
The Texas Co.	530	
Texhoma Oil & Ref. Co.	445	
Miscellaneous	9,610	
Total		16,680
Electra		
Empire Gas & Fuel Co.	1,280	
Humble Oil & Ref. Co.	185	
Griswold Oil Co.	260	
Gulf Production Co.	880	
Magnolia Petroleum Co.	4,405	
McMahon Oil Co.	195	
Panhandle Oil & Ref. Co.	90	
The Texas Co.	4,130	
Texhoma Oil & Ref. Co.	1,955	
Miscellaneous	5,510	
Total		18,890
Iowa Park, Etc.		
Griswold Oil Co.	80	
Gulf Production Co.	40	
Humble Oil & Ref. Co.	15	
Panhandle Oil & Ref. Co.	70	
Texhoma Oil & Ref. Co.	50	
Miscellaneous	4,040	
Archer County—		
Empire Gas & Fuel Co.	795	
Griswold Oil Co.	615	
Gulf Production Co.	895	
Humble Oil & Ref. Co.	160	
Magnolia Petroleum Co.	270	
Panhandle Oil & Ref. Co.	2,235	
Prairie Oil & Gas Co.	1,090	
The Texas Co.	955	
Texhoma Oil & Ref. Co.	3,290	
Miscellaneous	22,814	
Petrolia—		
Gulf Production Co.	55	
Magnolia Petroleum Co.	15	
The Texas Co.	60	
Miscellaneous	210	
Total		37,754
Stephens County		
Empire Gas & Fuel Co.	75	
Gulf Production Co.	1,325	
Humble Oil & Ref. Co.	1,000	
Magnolia Petroleum Co.	740	
Mid-Kansas Oil & Gas Co.	3,260	
Prairie Oil & Gas Co.	1,065	
Sinclair Oil Co.	165	
The Sun Co.	340	
The Texas Co.	1,830	
Texas Pacific Coal & Oil Co.	1,065	
Miscellaneous	7,215	
Total		17,080
Eastland County		
Gulf Production Co.	370	
Humble Oil & Ref. Co.	95	
Magnolia Petroleum Co.	525	
Panhandle Oil & Ref. Co.	355	
Prairie Oil & Gas Co.	700	
Sinclair Oil & Gas Co.	440	
The Texas Co.	295	
Texas Pacific Coal & Oil Co.	920	
Miscellaneous	2,600	
Total		6,300
Other Fields		
Strawn—		
Texas Pacific Coal & Oil Co.	370	
Miscellaneous	490	
Moran—		
Empire Gas & Fuel Co.	40	
Humble Oil & Ref. Co.	360	
The Texas Co.	140	
Texhoma Oil & Ref. Co.	155	
Miscellaneous	2,350	
Coleman County—		
Miscellaneous	75	
Brown County—		
Miscellaneous	735	
Comanche-Eastland—		
Humble Oil & Ref. Co.	215	
Magnolia Petroleum Co.	1,145	
Mid-Kansas Oil & Gas Co.	450	
Sinclair Oil & Gas Co.	45	
The Texas Co.	185	
Texas Pacific Coal & Oil Co.	145	
Miscellaneous	3,375	
Young County—		
Gulf Production Co.	90	
Sinclair Oil & Gas Co.	460	
Panhandle Oil & Ref. Co.	210	
The Texas Co.	65	
Miscellaneous	3,290	
Mitchell County	1,530	
Reagan County	7,130	
Jack County	30	
Scurry County	50	
Carson County	1,070	
Hutchinson County	170	
Callahan County	1,450	
Wilbarger County	5,000	
Total		30,600
Total this week		127,304
Total last week		125,200
Gain		2,104

KANSAS COUNTIES ARE DUE TO GET GOOD PLAY

(Continued from Page 34)

well is pulling big pipe with total depth at 2,987 feet, 5 feet in the sand, and oil standing 2,500 feet in the hole. It will probably be drilled in before this article reaches the reader, and if it makes a good well, as appearances seem to indicate, the pool will assume important proportions as the sand in the Marland well was found higher than in any of the present producers in the field. No. 7 Wallace, CWL NW SE, Section 24, the discovery, topped the pay at 3,003 feet about June 20 and was drilled to 3,032½ feet. It was constantly troubled with a cavey hole. The Emerald's No. 7 Kukuk, SW cor. NE, came in about October 10 in sand topped at 3,002 feet. Gas sand was reached at 2,981 feet and, when the hole was deepened to 3,031 feet, a 1,200-bbl. well resulted. It was said that the last 4 feet yielded the best pay. Discounting surface elevations, the Marland well is higher than the Emerald well by about 20 feet and there should be some good territory between the two.

Rainbow Bend Pool

A complete history of the Rainbow Bend Pool was given in The Oil and Gas Journal for September 4 so it need not be repeated here. Suffice it to say that the policy of development there remains the same as it has been throughout the pool's existence and the field is being extended from one location to another. Last week there were 16 operation under way in the field 11 of which were new rigs or rigging up, 3 wells were spudding and the other two were engaged with fishing jobs. There were just five operations outside of Section 20 33-3e. In the SE cor. SW of Section 17, the Waite Phillips Co. was rigging up No. 1 Thurlow. In the SE cor. NE, of Section 18-33-3e, the Waite Phillips Co. had a rig up for No. 1 Paterson, and in the SW cor. SE of Section 21-33-3e, the same company and others were moving in tools for No. 1 Snyder. In Section 29, the same interests had a rig in place for No. 1 Beebe, in the NW cor. NE, offsetting No. 1 L. Johnson which was fishing for 5-inch pipe at 3,186 feet on top of sand. The Waite Phillips Co. and Gypsy Oil Co. continued to have hard luck with their No. 1 Hansen, NE cor. SW SW, in the same section. The hole had just been cleaned out and the bit had just reached bottom when the tools were lost at total depth of 3,380 feet. This well had a 30-bbl. showing in sand at 3,294-3,304 feet about September 1, and swabbed 8 bbls. daily for several days.

The Marland Refining Co.'s No. 1 Sheehan, SW cor. NE, Section 34-33-3e, was being rigged up to drill deper. It is shown on the accompanying map as an oil producer, having made 12 bbls.

(Continued on Page 104)

Doherty Plan Meets With Little Favor

Mid-Continent Producers Enumerate Many Objections to Proposal for Stabilization of Crude Oil Production

By James McIntyre

The plan of Henry L. Doherty, president of the Cities Service Co., for the stabilization of crude oil production, meets with no favor among Mid-Continent producers who make their headquarters in Tulsa. The plan is characterized as revolutionary, and its application, even if it could pass all legal tests, tantamount to confiscation.

Mr. Doherty expressed himself before the convention of the National Petroleum Marketers Association at Cleveland, and the convention having been made up mainly of wholesale and retail dealers in refined products, with few of their number directly engaged in the production of the crude product, the speaker was not able to learn there and then the effect of his speech upon the minds of the producing branch of the business.

Mr. Doherty's proposal was published in The Oil and Gas Journal of November 20, but for the purpose of making the whole matter more clear a part of it is repeated here:

Desires Special Legislation

"You will be interested perhaps in studying the special legislation regarding irrigation and drainage districts where the owners of land are compelled by law to pool their interests and to operate as a district if the majority so elects. The plan I have advocated for the production of oil goes no further than to use the same character of legislation that has already been used for these irrigation and drainage districts and this special legislation has already secured the sanction of our courts.

"I would proporse, first—That no one be allowed to drill for oil without first receiving a State permit to do so.

Second—That nobody would be given a permit to drill for oil until an exploration district had been established.

"Third—That the exploration for oil should be restricted to that part of the exploration district one-half mile inward from the outer boundaries.

"Fourth—That the strip of one-half mile within the outer boundaries of the district should not be drilled for a period of one year after oil or gas had been found in commercial quantities or if sooner not until the exploration district had been enlarged or another district had been established adjacent to it and that the contractors on the two districts —if separate districts are formed—should not attempt to drill either half-mile strip until they had agreed on a plan on which it should be drilled, and failing to agree upon a plan, then the State engineer could specify the plan suggested by either contractor or a plan of his own.

"Fifth—That royalties should be paid to the trustees of the district and they would settle with the individual land holders according to the calculated amount or oil or gas underlying each man's land."

A Confession of Weakness

Mr. Doherty's suggested plan is regarded among those Mid-Continent oil men who were seen as an admission that the oil business is incapable of conducting its own affairs, a point on which they disagree with him. At the same time the generally expressed opinion was that the Doherty plan could not be operated even if made into law because the State would have no right to force a land owner into a pool such as Mr. Doherty proposes, nor do they believe the State could dictate to a fee owner where and when a well might be drilled on his land. A land owner owns from the center of the earth to the sky and has a right to do anything he pleases on his property or beneath the surface of it as long as he does not make a nuisance of himself or encroach on the rights of his neighbor. As an example, a land owner would have a right without consulting anyone to lay a pipe line across his own property, if in doing so he does not have to cross a public highway. If the pipe line is to go beyond the owner's property and is to cross or parallel a highway the State can step in and require the owner to incorporate and to build and operate under some kind of State supervision.

Oklahoma's Conservation Law

Oklahoma has a socalled conservation law which in reality includes two distinct laws, or sets of laws, having entirely different objects. One set of laws purports to regulate and govern the production of oil and gas so as to prevent actual waste and dissipation of these minerals and conserve them for the beneficial use of the present and future generations. The other, although often called a conservation law, in reality attempts to regulate the market price of crude oil. The Oklahoma Corporation Commission is given jurisdiction to enforce these laws. The first mentioned regulations are similar to the regulations prescribed by the Interior Department of the United States to govern the operations of oil and gas wells upon Indian lands and Government-owned lands, all of which are enforced by the Bureau of Mines. They are clearly within the police powers of the State and have been judicially sustained. But they do not have as their object the restriction of drilling, and give no power to the corporation commission to prevent socalled competitive and indiscriminate drilling in times of demoralization of the markets.

The Oklahoma crude oil conservation act goes much further than mere police regulation and is a bald attempt upon the part of the State to regulate the market price of crude oil. This law, passed in 1913, prohibits the wasteful production of crude oil and defines waste as including "economic waste"—the production of crude oil at a time when there is no market demand for the oil at the wells, equivalent to its actual value; "actual value" being the average value at retail of the by-products of oil when refined, less cost, and a reasonable profit for producing, transportation, refining and marketing. The Corporation Commission is given authority to determine and promulgate this actual value. Violations of the law are punishable by heavy fines, imprisonment and receivership. In other words, the State, through the Corporation Commission, has undertaken to forbid the production of crude oil when such operations are unprofitable to the operator and to determine the market price which would make it profitable.

Regarded as Unconstitutional

The best opinion regards the law as unconstitutional. It has never been subjected to a test in the courts, perhaps for the reason that the Corporation Commission has not sought to exercise the powers conferred upon it. Sporadic appeals have been made to the commission during times of overproduction of oil and consequent low prices to assert its authority, and hearings have been held which produced much superheated talk, but little results. In each instance the Commission failed to fix a price higher than that actually offered by the major purchasers of crude and nothing was accomplished. If it had exercised the authority given it, and its action had been sustained by the courts the results would probably have been disastrous to many producers intended to be benefited, since the law operates upon owners of wells. If the buyers refused to pay the price, many wells must have been shut in and consequently ruined. As a means of preventing indiscriminate drilling, or as a lever to jack up the market price, the law has been a failure.

Would Give State Control

Under the Doherty plan, the State would be given the right to say where and when wildcat wells could be drilled. It would give the State absolute control over the quantity of oil produced and by so doing would put the market price of crude in the hands of the State, regardless of conditions within the industry, so that even if the Doherty plan would stand the test of the courts it would be dangerous and demoralizing, if not ruinous, to the industry, in the opinion of oil men in the Mid-Continent, including corporation executives, and individual oil producers who have nothing to sell but crude oil.

The Doherty plan makes no provisions for the expiration of leases. What course would a producer pursue if he must drill a well on a lease in order to hold it and the State refused a permit to drill? The State could not force a renewal of the lease on land not its own. What protection does it offer the land owner or royalty owner if a neighboring well is draining his property and the producer is forbidden a permit to offset the producing?

The plan presumes that the State is the best judge of "favorable" areas in which to drill and the best judge of which particular lease or leases should be the scene of the first tests. It takes away from oil companies or individual oil men all powers of initiative on the question of where and when wildcatting should be pursued. It would remove the very instrument which has been responsible for discovery of all the fields in America, the initiative and daring of practical oil men who hunt for and find areas which look as though they might contain oil, and risk their money in the work of testing out such areas.

Absence of Uniformity

Another angle was given on the lack of feasibility of the plan, even if it were proved to be legally applicable and that would be its absence of uniformity. There are 18 oil producing States and if such a plan as Mr. Doherty proposes were established in all of them, the oil business would have 18 separate commissions or Judge Landises to answer to. What would be permitted in one State might be tabooed in another. The 18 oil dictators would not sit as one board but would work apart, exercising their authority on the oil producers of their own State alone. A broad gauged intelligent administration in one State might be offset in a neighboring State by narrowness and prejudice of a detrimental character, thus causing dissatisfaction and demoralization.

The above views as opposed to those of Mr. Doherty represent a composite of the thought of oil producers and company heads in Tulsa, who admit, however, that while they can find plent of reasons why Mr. Doherty's plan would not work out have no substitute plan of their own, other than the old one of voluntarily curtailing drilling when there is too much production, or discouraging new drilling by means of a low market price for crude oil.

MERCHANDISING OF DOMESTIC FUEL OILS AND DISTILLATES

By C. L. Maguire

Before National Petroleum Marketers Association

The anomaly of our industry is that the purchaser of any petroleum product usually assumes to know more than any petroleum salesman.

In gasoline and kerosene, gravity used to be the sole consideration. A salesman with a 60 gravity kerosene blend as a talking point had it all over a salesman with nothing better to offer than a mere 58 gravity, however low the end. Now it is different. Gravity is not the whole story. It still, however, occupies a high position in the public regard as well as in the minds of a majority of oil men.

It takes splendid salesmanship to sell lubricating oils on a talking point of lubricating value if the color happens to be dark. The customer insists on judging the lubricating value of an oil by its looks in a four-ounce bottle, and most oil men take the line of least resistance which is also, as it happens, most usually the line of largest profits.

The same thing is happening in the comparatively new branch of our industry, home heating with oil.

Of all the oil heaters on the market, I have yet to find two that agree exactly on any fuel required for the best operation of their particular burner. The graduations in gravities and specifications demanded are rather ridiculous from the standpoint of industrial economy. In any large city where a great many different makes of burners are used, a jobber would have to keep on hand furnace oil of many different specifications to meet the present individual burner requirements. I know of one Chicago jobber who handles and stocks eight different grades. In the smaller communities about one tank for distillate is a jobber's limit, and really one grade is all he could afford to carry, yet a burner salesman on entering a town to sell his burners, rarely thinks of going to the local oil companies to find out what grade of furnace oil would be most convenient for them to handle. If he goes, it is usually to make some personal financial arrangement for furnace oil orders turned over. It is almost a sure bet that the gravity oil the burner man tells the oil man he must stock will not work to best advantage in that particular burner. Why?

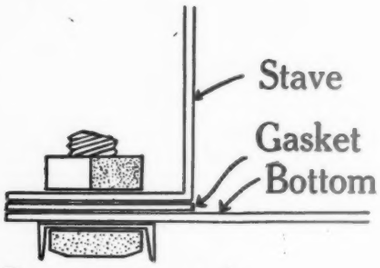
Our Old Friend "B. T. U."

Overdoing the B. T. U. talking point. A scientific B. T. U. is an old and valued citizen, but the public B. T. U. was mothered by an oil burner salesman. The B. T. U. as a talking point is to furnace fuel as gravity is to gasoline and kerosene, and as color is to lubricants. They only tell part of the story.

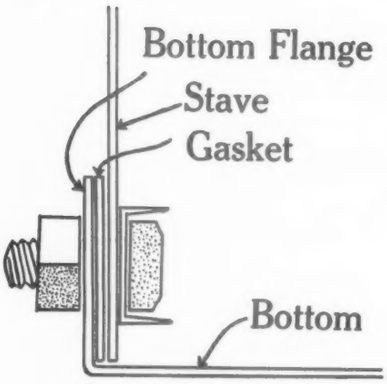
Without ever consulting the petroleum industry as to what is the best furnace fuel from the standpoint of industrial efficiency, costs and quantity distribution, each of the burner manufacturers has evidently during the development of his various burners, used for fuel whatever product he could get locally. When experiments had developed the burner to burn that particular local fuel, they naturally assumed their burner was a success and their troubles were over. However, as they will no doubt freely admit, their troubles hadn't even gotten a good start. "Our burner works wonderfully on John Smith's oil here in Smithville, but it smokes like the dickens on Bill Jones' oil in Jonesville. Bill Jones must be putting out rotten oil, it couldn't be

(Continued on Page 115)

GANTZ TANKS ARE BETTER



Construction of Any Tank Bottom



Construction of a Gantz Bottom

Notice the two types of construction shown above. Note how the Gantz bottom protects the staves against corrosion. Note how the Gantz bottom forms a joint which makes a tank really tight, and the deck is built the same way.

Note that the bolts in a Gantz tank must be cut off to give way, while in any other tank all that is necessary is to strip the threads. Note how easily and quickly a Gantz tank can be erected and reset, due to the construction.

Every bit of a Gantz tank is made of Armco Ingot Iron which is the longest lasting material made for tank purposes.

Write today.

GANTZ TANK CO.
Bolted Iron Tanks
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KANSAS COUNTIES ARE DUE TO GET GOOD PLAY

(Continued from Page 102)

November 4, and present total depth is 3,841 feet.

A well which created considerable excitement for a time and which attracted the money of several large companies was that of Paul Trees in the NE cor. SE, Section 10-31-3. After it was drilled in, however, and produced only 45 bbls. for a couple of months or so, it was shot with 30 quarts and made 80 bbls. It may be on the edge of a good field but nothing of a definite nature can be known until additional drilling is done. Sand was found at 3,033-45 feet; slate at 3,045-52 feet; sand at 3,052-62 feet and total depth was 3,064 feet in slate. The Arkansas Fuel Co. is drilling an east offset below 2,400 feet.

The sand in T. B. Slick's No. 1 Foster, SW cor. NE, Section 19-32-3e, is the deepest of any of the producing levels in the Winfield district except the Graham Pool. While the Rainbow Bend Pool is producing from a true sand at 3,000 feet that geologists correlate with the Burbank horizon in Oklahoma, and the Winfield deep sand is labelled the Bartlesville also at 3,000 feet, the Slick wildcat is yielding oil from the Wilcox level at 3,427-29 feet. It topped the big lime at 3,122-3,355 feet, found slate at 3,355-3,424 feet, cap rock at 3,424-27 feet and sandy lime at 3,427-29 feet. The first 17 hours' production was 638 bbls. and the next 24 hours' was 926 bbls., followed by 916 bbls.; 900 bbls.; 840 bbls.; and 825 bbls. It was then deepened 3 feet and made 795 bbls.; then 825 bbls.; 695 bbls.; 715 bbls., and 750 bbls.

The Graham Pool

In the Graham Pool, the Gypsy Oil Co.'s No. 1 Poor, SW cor. Section 3-33-3, diagonal northeast offset to the discovery, topped the lime at 3,213 feet and had lime at 3,530-33 feet with the Wilcox sandy lime carrying the oil at 3,524-31 feet. It started at 950 bbls. then made 760 bbls. and 640 bbls. a third day. It came in October 27. The discovery came in June 30 at 3,510-15 feet, good for 300 bbls. When deepened 3 feet, the production jumped to 964 bbls.

Nine wells are drilling and one rig is up in this pool, the development all being south of the two present producers. The Roxana Petroleum Corp.'s No. 1 Spruens, NE cor. NW SE, Section 9-33-3e, was drilling at 850 feet; the Waite Phillips Co.'s No. 1 Johnson, NE cor. SE, same section, was drilling below 2,250 feet; same company's No. 2 Johnson, NW cor. NE SE, same section, was a rig, rigging up. In the same section, the Marland Oil Co. was drilling its No. 2 Graham, SE cor. NE NE, at 2,200 feet; No. 3 Graham, SE cor. NE, was down 1,200 feet and No. 4 Graham, NW cor. NE NE, was below 1,700 feet. In Section 10-33-3, the Marland Oil Co.'s No. 1 Wright, NW cor. had a small show at 2,660 feet, a hole full of water at 2,670 feet and was drilling at 2,805 feet; No. 2 Wright, SW cor. NW NW, was down 2,175 feet, and the same company's No. 1 Bowers, SW cor. NW, was drilling at 2,135 feet. The Roxana Petroleum Corp.'s No. 1 Spruens, NW cor. SW, was setting the 8-inch pipe at 2,425 feet.

The Waite Phillips Co. plugged and abandoned its No. 1 in the SE cor. of Section 4-33-3, having picked up a hole full of water in sand at 3,606-14 feet.

Wildcats Have Showing

Several of the wildcats now drilling have had interesting oil showings and give reason to believe that other producing areas may be opened, although numerous of the deep dry holes in the county also had fairly good indications of oil. In Section 29-34-2e, the Phillips Petroleum Co.'s No. 1 Work had a small show of oil at 2,840-55 feet; sand at 3,028-33 feet; a hole full of water at 3,078-3,100 feet; a small show of oil at 3,410 feet and was drilling at 3,725 feet. In the next township, Arthur Rich and others had a broken sand at 2,050-60 feet in their No. 1 Bocoston, in Section 33-34-3e; a sand at 2,060-65 feet carried 2,000,000 feet of gas, but water filled the hole at 2,066 feet. The latest report was that the owners were fishing tools and casing at 3,445 feet. In the NE of Section 17-34-3e, E. B. Shawver and others were drilling their No. 1 Palmer at 1,775 feet.

Johnson & Ashe shut down their No. 1 Wahlenmaier, in Section 14-34-4e after running the 8-inch to 1,969 feet. Sand in this well at 1,962-69 feet tested 8,000,000 feet of gas. In Section 5-35-5e, Overlees & Springstead had a rig in place for their No. 1 Sterling. In Section 10-35-5e, the Trees Oil Co.'s No. 1 Warren, topped the lime at 3,065 feet, had a hole full of water at 3,145 feet and was shut down at 3,200 feet.

Brady Brothers & the Marland Oil Co. were setting the 6-inch at 3,015 feet in their No. 1 Leo Wood, SW cor. NE, Section 25-33-2e, Sumner County.

The Phillips Petroleum Co.'s No. 1 Veoil, NE cor. NW, Section 29-32-2e, had a hole full of water at 2,945-3,000 feet and was underreaming the 6-inch pipe to 3,030 feet. The Marland Oil Co.'s No. 1 Cochrane, in Section 26-32-3e was drilling below 1,000 feet.

Other Tests to Start

Rigs were being built for two tests north of Winfield that do not show on the map because they were started within the past week by the Indian Territory Illuminating Oil Co. One is in Section 3-32-4e, known as No. 1 Lynn, and the other in Section 35-31-4e, in No. 1 Graham. Several wells are drilling between the Winfield and Biddle Pools but are not listed because they are not wildcats.

Northwest of Winfield, the Arkansas Fuel Co.'s No. 1 Waite, in Section 29-31-3e, set the 5-inch at 3,047 feet on a hard shell and had a small show at 3,080 feet. The lime was topped at 3,082 feet and the well shut down at 3,205 feet.

In the NW cor. of Section 14-31-4e, the Trees Oil Co. found a sand in its No. 1 Sherwood at 2,986-3,000 feet with a small show and was shut down at 3,208 feet.

Near the town of Rock, in the NE of Section 18-31-5e, the Arkansas River Gas Co. was shut down at 3,205 feet in its No. 1 Shannon, after getting a hole full of water in sand at 1,850-80 feet and topping the lime at 2,930 feet. In Section 13-31-5e, southwest of the Eastman Field, the Southwestern Petroleum Co. was drilling its No. 1 Herod, at 2,050 feet.

The Marland Oil Co. had a rig in place for its No. 1 Eddie, in Section 21-31-6, and the Pennant Oil Co. was rigging up a test that does not show on the map in the CNL SE SW of Section 10-31-6, near a 3,330-foot duster.

South of Mulvane, in Section 8-30-2e, a well that has been spudded and shut down for some time may be carried on as it has been taken over by William McNabb and others and is known as No. 1 Stubbs. In the NE cor. of Section 16-30-4e, just west of the old Newton or Rock Field, C. E. Ash was drilling his No. 1 Starkey at 1,500 feet. It is a semi-wildcat.

Northwest of Wilmot, in Section 29-30-5e, the Marland Oil Co. found a hole full of water in No. 1 Dunbar at 3,365-80 feet and plugged back to sand at 2,265-70 feet where it had a showing whch swabbed 126 bbls. The casing was being ripped to test this sand.

Southeast of Atlanta, Christy and others were having trouble with the 10-inch pipe at 1,700 feet in their No. 1 Ward in Section 24-30-6e.

The well in Section 1-30-7e is not a wildcat, being on the edge of the Mahannah Field. It is the Arkansas Fuel Co.'s No. 1 and is a rig.

The accompanying map tells the story of disappointment and failure that has marked the quest for oil in this region in the past. It shows that many who get excited over deeper drilling because of the Emerald well near Winfield do not know what they are talking about. Many of the deepest holes on the map date back to war days and some of them to 1916. However, the map also shows that there is considerable uncondemned territory that may yet be prospected with success although it is an extremely hazardous undertaking.

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Oil Securities Steady, Not So Active

Favorable News About Approaching Stabilization Creates Optimistic Feeling Regarding Petroleum Issues on Market

By N. O. Fanning
Room 543, No. 30 Church St., New York

NEW YORK, Nov. 22.—Oil securities were steady during the past week, but they were not so active and practically no new high prices were established. Trading in the stock markets was concentrated on the railroad shares, and the oils were consequently neglected. The receipt of favorable news regarding progress toward stabilization in the oil business helped to create optimism with regard to these issues, and Wall Street was inclined to look forward to still further improvement in the near future.

The financial district frankly expects higher crude oil and gasoline prices in the near future. This opinion is not based on an exhaustive study into the statistical position of the oil business, but on the belief that business as a whole throughout the civilized world is on the mend and that the oil industry cannot help but share in it.

The Dawes settlement and the elections have given rise to the expectation that Euroue will begin to speed up its industries and will need quantities of raw material which can only be procured in large enough degree in the United States. In the case of oil, however, Europe has not manufacturing facilities of any importance, and so the belief is that the exportation of oil products over the next 12 months will be even larger than the record of the past 12, especially fuel oil, gasoline and lubricating oil.

The stimulation which this activity in Europe is expected to have on the domestic industrial situation will also, it is hoped, be of direct benefit so far as domestic consumption of oil is concerned, so that the oil industry must undoubtedly share largely in any boom in general business.

Oil Company Earnings

Wall Street is already beginning to speculate with regard to oil company earnings for 1924, especially as to how they will compare with 1923. The financial records of the oil companies for 1924 will doubtless depend to a great extent on what happens between now and January 1. Any readjustment in prices is a general increase in the price of crude oil and gasoline, as many expect, the reports for 1924 will be much better than those for 1923, especially with those concerns that have large inventories.

With stocks of oil in tanks at a record figure, the item of inventory value will be all-important in connection with earnings. One favorable feature in this regard is that such drastic downward readjustments in inventory values were made in 1923 that many of the companies started in this year thoroughly liquidated. Prices this year compare favorably with those at the close of 1923, and therefore if there is no further change, no further drastic reductions will have to be made.

Sinclair Financing

The chief financial development in oil during the week was the offering by a banking group of $15,000,000 Sinclair Consolidated Oil Corp. three-year first lien collateral 6 per cent bonds, at 98½ and accrued interest. The security for these bonds consists of the pledge of $110,000,000 face amount of first mortgage bonds of subsidiary companies and by the capital stocks owned of an aggregate par value in excess of $80,000,000. The $110,000,000 bonds to be pledged comprise those of Sinclair Oil & Gas Co. ($45,000,000), Sinclair Refining Co. ($57,000,000) and Sinclair Navigation Co. ($8,000,000).

The $15,000,000 bonds are in addition to $72,856,000 series A and B bonds, making the total outstanding amount $87,856,000 of an authorized issue of $100,000,000.

Marland Oil

Marland Oil Co. for quarter ended September 30, 1924, reports net income of $948,183 after expenses, interest, depreciation, depletion, etc. After charging out $3,376,864 adjustment to reduce inventory to market there was a deficit of $2,428,681.

Applying deficit for the third quarter resulting from inventory adjustment, to earnings for six months ending June 30, 1924, leaves net income of $1,233,767 for first nine months of 1924.

Net income of $1,233,767 reported by Marland Oil Co., for nine months ended September 30, after all charges, including inventory adustment, is equivalent to 19 cents a share earned on 1,549,897 outstanding no par shares of stock.

Consolidated statement of Marland Oil Co. and subsidiaries for nine months ended September 30, 1924, follows:

Gross earnings	$27,361,003
Expenses	18,364,485
Net earnings	$ 8,996,518
Other income	183,511
Gross income	$ 9,180,029
Interest, etc.	747,265
Wells and leases abandoned	1,510,513
Depreciation reserve	1,554,653
Depletion reserve	756,967
Balance	$ 4,610,631
Inventory adjustment	3,376,864
Net income	$ 1,233,767

Consolidated balance sheet of Marland Oil Co. and subsidiaries as of September 30,1924, follows:

Assets—Cash, $2,722,381; bills receivable, $204,499; accounts receivable, $4,157,237; crude oil, $7,136,649; refined products, $4,066,950; material and supplies, $1,916,132; prepaid insurance and interest, $136,154; miscellaneous items, $143,421; gold bonds purchased, $148,000; due from officers and employes, $169,014; sundry debtors, $232,976; deferred items, $636,998; stock owned by subsidiaries, $853,352; investments and advances to affiliated companies, $11,357,140; real estate, tank cars, leaseholds, etc., less depletion, $71,358,050; total, $105,237,003.

Liabilities—Bills payable, $7,050,945; accounts payable, $2,122,475; interest and taxes accrued, $338,251; gold bonds, $5,101,000; purchase money obligation, $3,017,411; equipment trust certificates, $696,000; reserve for contingencies, $200,000; depreciation reserve, $7,391,585; depletion reserve, $5,038,880; drilling costs, $1,435,762; amortization, $62,734; minority stock interest of subsidiaries, $186,195; capital and surplus (represented by 1,549,987 shares) $72,595,765; total, $105,237,003.

Marland Oil is attracting considerable attention due to the option held by J. P. Morgan & Co. to purchase 335,000 shares of treasury stock at $40 a share.

Option was taken by the banking house on January 25, this year, when it also purchased 300,000 shares at $30 a share, following approval by stockholders at a special meeting of both the purchase and the option. The banking firm paid Marland Oil $1 a share for its option, which gives it the right to buy the 335,000 shares at $39 a share until February 10, 1925. If less than the full 335,000 shares is taken under the option price to the company will be above $40 a share.

Official representation of the house of Morgan with Marland Oil occurred last May, when George Whitney, a partner of the banking house, was elected a director. Subsequently, Mr. Whitney, W. C. Potter, president of the Guaranty Trust Co., Charles Smithers of F. S. Smithers & Co. and E. N. Potter of Potter & Co. were elected among others, as member of the executive committee of the Marland Oil Co.

Late last month the banking house, with which these four directors are associated, sold privately $20,000,000 two-year 5 per cent notes of Marland Oil Co. at par. Proceeds were used to retire $2,295,000 7½ per cent and $2,710,000 8 per cent bonds at their next call date; pay off $3,021,498 purchase money lease obligations; liquidate bank loans and balance for other corporate purposes. After these take place Marland's new note issue will constitute the only funded debt excepting a small issue of equipment trust certificates and leave Marland with more than $8,000,000 cash.

Shell Union

The Wall Street Journal says earnings on the 10,000,000 shares of common stock of Shell Union Oil Corp. in the first three quarters of $16,629,819, before taxes, were larger than the $15,659,156 returned for the junior shares in the full year 1923. If Shell Union's final quarter should return profits approximating those of the third quarter, $5,759,986, total 1924 net for the junior issue will be $22,389,805, before taxes, equal to $2.24 a share on the common, or more than double the $1 annual dividend. Such net would exceed that of

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	‡Dividend Rate	Clos. Quotations Nov. 24	Nov. 17	1924 High	1924 Low	1923 High	1923 Low
1.	American Republics	..	..	*40	40	43	25	..	..
2.	Associated Oil	25	6	32½	31⅞	34⅝	27⅝	29¼	29½
3.	Atlantic Ref. com.	100	..	92½	92½	140½	78½	160	98¾
4.	Barnsdall "A"	25	..	18½	19	21⅝	14	35	9⅞
5.	California Pet. com.	25	7	23⅝	23½	29	19⅞	28½	17½
6.	Cosden & Co. com.	..	..	27⅝	28⅛	40½	22⅝	62¼	23¾
7.	General Am. Tank.	..	†3	48½	*45	49¼	35½	71⅞	40
8.	General Asphalt	100	..	52¼	51	52	31⅜	64	23
9.	General Petroleum	25	8	43	43	45	38⅝	..	..
10.	Houston Oil	100	..	73	72	82½	61	78	40¾
11.	Independent Oil & Gas	10	..	13	11⅝	13½	5⅝	11¼	3⅜
12.	Indian Refining	10	..	*5⅛	*5	7	3⅝	8½	4
13.	Invincible Oil	50	..	14⅝	15	16⅞	11⅝	19¼	7½
14.	Maracaibo	..	..	28½	28	37½	26⅝	28¼	16
15.	Marland	..	..	39¾	38½	43	29	59⅝	18½
16.	Mexican Seaboard	..	..	20⅛	19⅝	25⅜	14⅛	19¾	5⅜
17.	National Supply	50	6	59⅞	60	72½	54	68	54
18.	Pacific Oil	50	†2	54⅝	54½	58½	45	52½	31½
19.	Pan American com.	20	16	54⅝	55⅝	61¼	44¼	93½	53
20.	Phillips Petroleum	..	†2	36½	36⅛	42¼	28½	69⅝	19¾
21.	Producers & Refiners	50	..	28½	28	43½	22⅜	58¼	17½
22.	Pure Oil com.	25	6	27	26	27⅜	20	32	16¼
23.	Royal Dutch, N. Y. sh.	13.40	2.62	46⅝	44⅞	59½	40⅜	55⅛	40½
24.	Shell Transport	10	x02½	*38	37⅝	41½	33	41¼	29½
25.	Shell Union com.	..	†1	19¾	19⅝	20⅝	15¾	19¼	12⅜
26.	Simms Petroleum	10	..	18	17⅝	19	10⅜	16⅜	6½
27.	Sinclair Cons. com.	..	..	17½	17⅛	27½	15	39⅜	16
28.	Skelly Oil	25	..	22⅜	21⅝	29	17⅛	35	13⅛
29.	Standard of California	25	8	61	60¾	68½	55⅛	64½	47⅛
30.	Standard of N. J. com.	25	4	36⅝	37	42¼	33	44¼	30⅞
31.	Standard of N. J. pfd.	100	7	118¼	118	118⅝	115⅜	118¼	114⅝
32.	Superior Oil	..	..	4⅝	4⅝	8⅛	2⅝	6⅜	2
33.	The Texas Co.	25	12	43½	42¼	45⅝	37⅜	52⅞	34⅝
34.	Texas Pac. Coal & Oil	10	..	11⅛	10⅝	15¼	8⅛	24⅝	5½
35.	Tide Water Oil	100	4	128	129	151	116¼	144	94
36.	Transcontinental	..	..	4	4⅜	6¼	3⅝	14½	1¼
37.	Union Oil of Cal.	25	7.2	37⅛	35¼	37⅞	36⅛	..	..
38.	Union Tank, com.	100	5	123½	121	132⅞	94	114	106
39.	White Eagle Oil & Ref.	..	2¼	26⅞	26⅝	29⅜	23⅛	30⅝	20½
	Standard Oil Stocks								
40.	Anglo-American Oil	£1	25	17⅛	17⅝	18	14⅝	19⅜	13½
41.	Borne Scrymser	100	12	226	*219	264	160	163	110
42.	Buckeye Pipe Line	50	14	63½	64	85½	51	94	57½
43.	Chesebrough Mfg. Co.	25	14	*45	*48	52½	29¼	340	205
44.	Crescent Pipe Line	25	..	*13½	13½	20	11¼	25	15
45.	Cumberland P. L.	100	10	*139	138	148	109	117	80
46.	Eureka Pipe Line	100	8	92	*91	105	74	117¼	87
47.	Galena Signal com.	100	4	54	*58	69¾	62½	78	55
48.	Humble Oil & Ref.	25	4.8	38¼	38	43¾	36	41	28¼
49.	Illinois Pipe Line	100	12	134	133	161	123	171	115
50.	Imperial Oil, Ltd.	25	12	111	108½	119	99	123	92
51.	Indiana Pipe Line	50	8	*77	76	100	66	103	81
52.	International Pet. Co.	100	x50	22	20⅝	22¼	16⅞	24⅝	13¼
53.	Magnolia Pet. Co.	100	4.5	134	135½	160	124	166	123
54.	National Transit	12.50	16	23⅜	*23	25⅜	21¼	29	19½
55.	New York Transit	100	10	*66	68	97	54½	138	70
56.	Northern Pipe Line	100	6	84½	79	107½	73	111	96
57.	Ohio Oil Co.	25	8	63⅝	63	79½	58	85⅝	48⅝
58.	Penn-Mex. Fuel	25	..	*31½	34	45⅝	32½	45	10½
59.	Prairie Oil & Gas	100	8	206	208½	269	194½	272	152
60.	Prairie Pipe Line	100	8	105	105	111	100	117	93
61.	Solar Refining Co.	100	16	218	198	225	170	212	161
62.	South Penn Oil	100	..	141	140	176	117	196	100
63.	South West Pa. Line	100	8	*80	*80	89	76½	89	66
64.	Southern Pipe Line	100	16	90	94	100	86	116	87
65.	Standard of Indiana	25	10	60⅝	59⅜	69⅜	54¼	69⅞	48⅛
66.	Standard of Kansas	25	..	38⅝	38½	50½	32½	56¼	36½
67.	Standard of Kentucky	25	16	118½	119¼	121½	101	109½	76
68.	Standard of Nebraska	100	20	243	238	256½	198	280	186
69.	Standard of New York	25	5.6	44⅝	44	48	37⅜	49¾	35½
70.	Standard of Ohio com.	100	10	344	318	336	277	320	270
71.	Swan & Finch com.	25	..	*24	*23	28	20	..	..
72.	Vacuum Oil	25	†3.75	80½	80	83¼	66½	55½	40
73.	Washington Oil	10	..	*30	*30	29	25	28	20¼
	Miscellaneous Stocks								
74.	Cities Service, bks. sh.	..	†21	16¼	16⅜	19	13¼	18⅛	12⅝
75.	Gulf Oil Corp. of Pa.	25	6	67⅜	65½	67⅝	56	68¼	45⅝
76.	Mutual Oil	5	10	11⅞	11⅜	14	9⅝	..	..

*Bid, no sales. †In dollars. ‡The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Nov. 24	50.23	Oct. 20	46.99	Sept. 15	47.41
Nov. 17	50.07	Oct. 11	45.24	Sept. 8	47.89
Nov. 10	51.86	Oct. 6	46.20	Aug. 30	47.59
Nov. 3	48.16	Sept. 27	46.70	Aug. 25	47.01
Oct. 27	47.58	Sept. 22	47.02	Aug. 18	47.85

1923 by close to $6,000,000. Last year's net was equal to $1.95 a share on the 8,000,000 shares then outstanding. Since, Shell Union has issued 2,000,000 additional common shares at $10 a share, bringing in $20,000,000 cash. The profit arising from the sale of 235,000 shares of Union Oil of California was not included in the report for the third quarter and should appear in the full year's figures. Deduction in each quarter of more than 50 per cent of gross income for depreciation, depletion, drilling expenses, etc., for the first nine months equaled 50.8 per cent of gross, while in the same period of 1923 such charge-offs equaled 45.3 per cent of total income.

Below is presented a table giving the income account by quarters reported so far this year:

	Sept. 30	June 30	March 31
Gross income	$12,154,947	$12,392,788	$11,059,938
Depreciation, depl., etc.	6,109,929	6,289,199	5,697,842
*Net incm.	$ 6,045,018	$ 6,103,589	$ 5,362,096
Pfd. div...	285,132	296,752	300,000
Com. div..	2,500,000	2,500,000	2,500,000
Surplus ..	$ 3,259,886	$ 3,307,837	$ 2,562,096

*Before federal taxes and not including profit from sale of investments.

In the nine months gross income aggregated $35,607,673 while deductions for depreciation, depletion, drilling expenses, etc., totaled $18,096,970. These contrast with gross of $26,860,697 and charge-offs of $12,159,297 n the same period of 1923.

NORTH TEXAS MARKET STRONGER DURING WEEK

FORT WORTH, Tex., Nov. 22.—The market for refined products grew stronger during the past week with the continued good demand for the 64-66 375 end point gasoline leading all other grades. Reports that the Sinclair Refining Co. and the Carson Petroleum Co. were still in the market for additional shipments for export and the rising prices being paid for the scattered domestic shipments advanced this product to a price of 10¼ to 10½ cents, with scarcely any available at the latter figure. U. S. Motor gasoline, 58-60 437 end point, was scarce and strong, bringing 7¾ to 8 cents.

Natural gasoline advanced in line with the export material, Grade A bringing as high as 9 cents on some shipments, with 8¾ cents the bottom price. Grade B was selling for 8½ cents while Grade C was bringing from 8¼ to 8½ cents. Blends were much scarcer, but the heavy demand of the previous week seemed to have been satisfied, and the prices showed little change. Naphthas were selling for 7 to 7¼ cents and the other grades of gasoline advanced in line with the export and U. S. Motors grade.

Fuel oil was still strong but there was a small amount of the heavy gravity stuff which was available as low as $1.02½. Kerosene was weak, some of the 41-42 grade, water white, selling as low as 4¼ cents with the prevailing price 4⅝ to 4½ cents. Distillates, particularly the 38-40 straw colored, showed little change, bringing 3½ to 3⅝ cents. Gas oil was unchanged in either demand or price.

JOBBING ASSOCIATIONS ARRANGE FOR MEETINGS

CLEVELAND, Ohio, Nov. 20.—Fred Buehler, of the Dacotan Oil Co., Madison, S. D., was selected to act as chairman at the next meeting of presidents and secretaries of State jobbing associations to be held in connection with the spring convention of the National Petroleum Marketers Association. The presidents and secretaries met here twice during the annual convention of the national association which closed here today. The meetings were not announced until the convention opened and no program had been prepared. However, the meetings proved very interesting to State association officials and it was decided to have a definite program arranged at the next national convention. Mr. Buehler, who is secretary of the South Dakota association, was appointed to act as chairman at the next meeting and also to arrange for the program. James A. Gilmore of Jackson, Mich., who is field secretary of the Michigan association was elected secretary.

Late News From the Fields

GULF COAST

In the Somerset Field, the Helvetia Oil Co. is drilling No. 3 Smith, the Graylurg Oil Co. No. 30 Ernst, Somerset Crude Oil Co. No. 4 Touchstone and Hitchman & Howard No. 10 Brown. The Gas Ridge Development Co. has started No. 14 Hamilton and 5 Cohen.

In Milam County, the Sinclair Oil & Gas Co.'s No. 1 Smith, 12 miles southeast of Cameron, is below 1,725 feet. In the shallow sand Rockdale-Minerva section, the Noack Oil Co.'s No. 2 Sterlsky is drilling and the Fogel Oil Co.'s No. 2 Lucas is around 800 feet.

Morgan & Gibble's No. 2 in the Caroline-Texas gas section blew in at 2,610 feet and is making 20,000,000 feet of gas. In the Bruni section of Webb County, the Cole Petroleum Co.'s No. 5 is a gasser, estimated as high as 60,000,000 feet at 1,695 feet. No. 6 is showing oil in a sand at 2,150 feet. The Wolcott-Morgan Co. set casing at 2,203 feet in No. 1, Survey 688.

In the Los Ojulas Pool, the Wheatley Oil Co.'s No. 12, Block 50, has spudded in as has the Magnolia Petroleum Co.'s No. 12 Ochoa. The Wheatley Oil Co. has the largest production in the pools, the runs for October being 37,210 bbls. Mills Bennett set casing in No. 10 Laurel. In the Aviator Pool, the Rydal Oil Co. set casing in No. 3 Puig. The Witherspoon Pipe Line Co. is laying a 4-inch line into that pool to handle the production.

Jim Hogg County

The Texpata Pipe Line Co. is laying another 6-inch line to the Henne, Winch & Fariss well on the Martinez, in Jim Hogg County, and the Magnolia Petroleum Co. is also laying a 6-inch line there from Oilton. These additional facilities will handle 10,000 bbls. per day. More tests are starting every day and additional acreage is being leased. Henne, Winch & Fariss are setting casing in No. 4 Martinez at 2,000 feet. The sand in No. 3, the producer, was at 2,002 feet. A derrick is up for No. 5 located 300 feet south. The Magnolia Petroleum Co. has spudded in No. 1 Thompson ranch and the Witherspoon Oil Co.'s Nos. 1, Block 16, and 2, Block 15. These are the offsets to the producer. O. W. Killiam's No. 1, Block 16, Las Animas grant, is shut down for water at 1,800 feet. The Texco Oil Co. has a derrick for No. 1, Block 2. The Plateau Oil Co. has derricks for Nos. 1, Block 10, and 1, Block 15, same grant. The Shasta Oil Co. set 6-inch casing in 1 Holbein ranch around 2,300 feet and will drill out the plug next week. If a well is developed it will extend the distance to the east. The Weber Oil Co.'s No. 4 Las Animas grant is testing at 2,774 feet. J. W. Pipping is resuming work on the grave yard test at Randado and the Rydal Oil Co. is starting No. 1 Allen ranch, north and east of Randado. The Humble Oil & Refining Co. has spudded in another formation test on the northwestern part of the East ranch.

Luling Field

Green & Ross got the Austin chalk in No. 1 Pryor, north of production, on the Guadalupe County side of the Luling Field, at 1,575 feet, which is higher than where it has been found in previous tests. The Clear Fork Oil Co. has a derrick up for No. 1 Rodenburg, northeast of production on the Caldwell County side. M. C. Rayor is drilling No. 2 fee at 3,000 feet, southeast of the town of Luling. Jennings and others' No. 1 Lynch is drilling below 1,900 feet, trying to extend the area to the southwest. Only 10 rigs are running in the field proper.

In Bexar County, T. B. Slick abandoned No. 1 Lamm in black sulphur water below 3,100 feet. The joint Dixie Oil-Good Oil Co., 2 miles south of Adkins, is reported in a sand showing oil and gas at 1,400 feet.

In Atascosa County, The Texas Co.'s No. 1 Peeler is below 1,500 feet. Steel and others' No. 1 Lynn, in Live Oak County, is fishing at 1,360 feet for the bit which twisted off. The Mesquite Oil Co. is preparing to test a showing in No. 1 fee, in Duval County at 2,150 feet.

In Medina County, the California-Medina Oil Co.'s test northwest of De Hanis, is in what is said to be the Penna formation at 2,650 feet. The Ina Oil Co. has three very small wells south of De Hanis at 925 feet, developed during the past year. The important tests, however, are around the town of Devine. The Witherspoon Oil Co.'s test, northwest of Devine, is in the Edwards lime at 2,760 feet and cores show some oil. The test that has been idle waiting on casing which will be set and the hole bailed. The Amy Oil Co. set casing in 1,905 feet, south of Devine. Kone & Willis are drilling southeast of Hondo. The Witherspoon test is west of the Somerset Field.

Coastal Territory

The Rycade Petroleum Corp. abandoned No. 3 Hudson on the southeast side of the dome in the Markham Pool in rock salt at 3,610 feet. The test was about 1 mile from what is supposed to be the center of the salt mass. While the depth is unusual for the rock salt, the Markham Pool is one of the exceptions in that previous tests on the south side of the dome went in that formation below 4,100 feet. In the Goose Creek Pool, the Gulf Production Co.'s No. 4 Hirch is setting strainer at 4,390 feet for a test. The Kane Production Co. headed by J. J. Kane of Galveston, is starting 10 formation tests on a 10,000-acre block 6 miles east of the Humble Pool. Two light rotary rigs will be used. The Wonder Oil Co. (T. W. Horn and associates) has taken over the holdings of the Selma Oil Co. in the Spindletop Pool, consisting of 15 acres and a few small wells.

The Jackson County Syndicate's No. 2 Drushell, south of Edna, in Jackson County, is a wild gasser at 2,760 feet. It is estimated flowing as high as 50,000,000 feet. Efforts are being made to get it under control.

OKLAHOMA

The three wells drilling near the producing test of the Roxana Petroleum Corp. which is located in the C NW NE NW, Section 12-8 8, Seminole County, were not deep enough on Tuesday to throw any further light on the value of the area. The Roxana Petroleum Corp.'s No. 1 Culler, C SW SE SW, Section 1-8-8, was running liner to 3,402 feet. The Sinclair Oil Co.'s No. 1 Manley, C SE SW NW, Section 1, was running 6-inch to set at 3,427 feet. The Dixie Oil Co.'s No. 1, C NE NE NE, Section 2, was shut down at 3,415 feet. The top of the sand in the Roxana's No. 1 Buckner is not definitely known. The gas sand was reported at 3,400 feet and the oil sand at 3,411 feet. The well is producing 1,100 bbls. of oil with 600 bbls. of water per day.

The Cromwell Field continues to spread out to the northeast and the Sinclair Oil & Gas Co. expects to drill every location on its 80 acres in the NE of Section 4-10-8 if its No. 1 Yarbrough, SW cor. NW NE, proves to be as good a producer as it indicates. It topped the gas sand at 3,356 feet Monday and started spraying a little oil Tuesday, and the big pipe was being pulled. The sand elevation is about on a level with the Waite Phillips producer half a mile south and a good well is expected. It is considerably higher than the Laurel well, half a mile southwest.

CRUDE SITUATION BIG FACTOR WITH REFINERS

OIL CITY, Pa., Nov. 24.—The crude oil situation provides the leading news in connection with the refinery industry in northwestern Pennsylvania at the present time. Developments in the crude oil situation overshadows any news of the week at the refineries or at the jobbing centers.

Crude oil producers throughout the field are holding tenaciously to their credit balances in the hope of higher prices. So little is being offered that few refineries in the district are being operated at better than 50 per cent of capacity. There is a good demand for the products but this can not be entirely met on account of the lack of the raw material from which to refine the various products. Storage tanks of refiners are nearly empty in most cases. There is a good demand for the products and yet the orders can not be filled because of the lack of sufficient finished goods to fill them.

Gasolines are stronger than they were last week in this district and there is a good movement of this product especially for this time of the year. Actual consumption fell off during the first of the week on account of the cold spell. However, it is back again with better weather and with thousands traveling fairly long distances to some of the big football games on Saturday's schedule.

Kerosene is weaker and the sales have fallen off, probably as the result of the close of the fall plowing season.

Fuel oil is up in price. This is a very scarce product in this district at the present time and is very hard to secure. The refineries can sell all of it that they can make.

Cylinder stocks are in big demand and they too are scarce at the present time. Neutrals are about the same as they have been except for a higher price range.

Wax continues to be very scarce and strong.

FEDERAL JUDGES HEAR TULSA GAS RATE CASE

The hearing in United States District Court at Oklahoma City, involving $3,000,000 in gas rebates claimed by the city of Tulsa was transferred soon after it opened to Tulsa.

Judge Charles B. Davis of Missouri, William S. Kenyon of Iowa and F. E. Kennamer are on the bench.

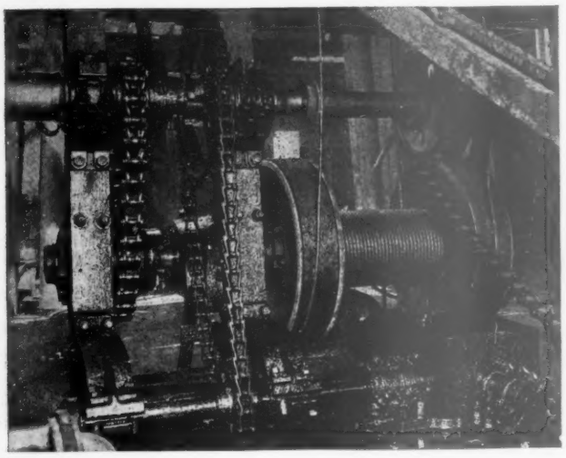
The hearing is on the petition for an injunction filed by the City of Tulsa against the Corporation Commission which issued orders permitting the Oklahoma Natural Gas Co. to make a series of increases in its rates since 1918. I. J. Underwood, Tulsa municipal attorney and F. E. Riddle, special counsel for the property owners, placed the contention before the court that a contract made in 1903 for 25 years between Tulsa and the gas company, and providing for a 25-cent gas rate, is still in effect. In 1918 the gas company abandoned the contract when the Corporation Commission authorized an increase in rates.

The original increase was followed by others and now the consumers' rate in Tulsa is between 38 and 62 cents. In addition to seeking a refund for the $3,000,000 alleged to have been illegally collected through the increased rates, the city asks an injunction against the enforcement of the increases authorized by the commission.

The constitution of the United States holds that no State shall pass laws impairing the legality of existing contracts. The Tulsa attorneys claim the corporation commission's act was in violation of this provision.

OKLAHOMA NATURAL VALUATION

OKLAHOMA CITY, Nov. 22.—The investigation of the value of the property of the Oklahoma Natural Gas Co. before the Corporation Commission for several years has been again taken up. The valuation report, filed by E. B. Black of Kansas City after an investigation and appraisal consuming about one and one-half years and costing nearly $50,000, was the specific subject. Cross examination of Mr. Black by Judge D. A. Richardson, attorney for Oklahoma Natural, took the remainder of the week. Upon the conclusion of the hearing the commission will make its findings as to the proper city gate rates to be charged for gas by Oklahoma Natural. This will affect rates charged consumers in about 45 cities and towns in the States. The present city gate rate for gas used for domestic purposes is 38 cents per 1,000 feet. It was estimated at the beginning of the hearing that it might continue for 10 days to two weeks.



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* * *

Year after year Rex Chabelco continues to be the largest selling chain in oil fields the world over. Why? Simply because of its proved ability to stand up to the job better than ordinary chain.

Rex Chabelco 1240, for example, set the pace for long, low-cost service because it was the first all steel chain made with notched out sidebars—a revolutionary feature that reduced "whipping action" and so lengthened the life of both chain and sprockets.

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When buying new drives for your rig, it pays to be sure you get genuine Rex Chabelco—the fine result of 30 years' experience in making good oil-well chain. Look for the name Rex Chabelco stamped on the sidebars. The coupon will bring you a sample link. Mail it today!

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OCTOBER OUTPUT IN OKLAHOMA AND KANSAS SHOWED DECLINE

Crude production in Oklahoma in October fell off to 521,084 bbls. a day, a decline of 21,217 bbls. a day from the average daily record for September. The average for August was 534,584 bbls. and that of July was 490,050 bbls.

Big declines in the Wilcox sand pools of Osage County, which resulted in a falling off in the "outside" Osage production from 51,315 bbls. a day in September to 42,487 bbls. a day in October was one of the contributing causes to the general decrease in output, while Tonkawa dropped from 104,367 bbls. to 101,419 bbls.; Burbank from 74,317 bbls. to 73,360 bbls.; Cromwell from 45,060 bbls. to 40,816 bbls.; the general Bristow area from 47,997 bbls. to 45,962 bbls., and Stroud from 14,398 bbls. to 6,688 bbls., these having been the most pronounced declines. Increases are seen in the new Watchorn or Otoe area in western Pawnee County, which increased from 4,324 bbls. a day in September to 6,361 bbls. a day in October. This pool at present is producing over 8,500 bbls. a day from 11 wells.

In the Kansas fields there was a slight decline in production. The Wilcox sand pools in Montgomery County, notwithstanding the new wells drilled in October, failed to increase their production and the old fields of the State fell off sufficiently to offset the increase in Cowley County, where the Rainbow Bend Pool is the sensation. Cowley County's production increased from 9,008 bbls. a day in September to 12,208 bbls. a day in October, but Marion and Butler County each showed a steady decline, while Greenwood County's numerous pools dropped off from 29,664 bbls. a day in September to 27,740 bbls. a day in October.

Following is the record of average daily production and total production for the month in each district in the two States:

OKLAHOMA

	Av. Dy. Prod.	Monthly Prod.
Washington County	6,588	204,228
Nowata-Rogers Counties	6,122	189,782
Burbank	73,360	2,274,160
Osage, outside of Burbank	42,487	1,317,097
Bird Creek, Owasso, etc.	4,744	147,064
Red Fork, Sand Springs, Turkey Mountain, etc.	2,410	74,710
Bixby, Leonard and Jenks	2,011	62,341
Broken Arrow	599	18,569
Mounds, Beggs, Hamilton Switch and Youngstown	11,116	344,596
Bald Hill	2,219	68,789
Okmulgee and Morris	3,514	108,934
Henryetta, Schulter and Tiger Flats	2,590	80,290
Muskogee and Wagoner	1,708	52,948
Wewoka	7,088	219,728
Cromwell	40,816	1,265,296
Deaner-Lyons	6,350	196,850
Okemah	256	7,936
Wetumka	84	2,604
Weleetka	227	7,037
Papoose-Gilcrease	14,230	441,130
Cushing and Shamrock	23,910	741,210
Glenn, Sapulpa and Kiefer	9,911	307,241
Bristow, Kelleyville and Depew	38,947	1,207,357
Eastern Bristow	7,015	217,465
Cleveland-Keystone	4,410	136,710
Jennings	7,144	221,464
Otoe or Watchorn	6,361	197,191
Yale, Quay and Ingalls	5,101	158,131
March Pool (N. Cushing)	1,296	40,176
Stroud	6,688	207,328
Blackwell and Deer Creek	3,026	93,806
Mervine	509	15,779
Braman	1,150	35,650
Tonkawa	101,419	3,143,989
Billings	428	13,268
Garber	4,953	153,543
Healdton	16,164	501,084
Hewitt	17,965	556,915
Tussy or Sholom Alechem	1,625	50,375
Loco-Milroy	2,519	78,089
Fox	2,418	74,958
Brock	1,225	37,975
Graham	12,616	391,096
Kilgore	142	4,402
Comanche	570	17,670
Duncan	7,293	226,083
Walters	1,064	32,984
Hamro (6s-5w)	635	19,685
Cement	2,170	67,270
Robberson	3,429	106,299
Sayre	172	5,332
Allen	300	9,300
Total October	521,084	16,153,604
Total September	543,301	16,299,030
Difference	21,217	145,426

KANSAS

	Av. Dy. Prod.	Monthly Prod.
Marion County:		
Florence	1,679	52,049
Peabody	2,966	91,946
Covert-Sellers	1,068	33,108
Butler County:		
Elbing	3,612	111,972
Potwin	470	14,570
Cameron-Robinson	773	23,963
Wilson-Dunkle	2,102	65,162
Towanda	3,414	105,834
El Dorado	6,664	206,584
Fox-Bush	3,142	97,402
Nuttle-Koogler	1,604	49,724
Sluss	513	15,901
Blankenship	1,107	34,317
North Augusta	1,240	38,440
South Augusta	2,422	75,082
Smock	261	8,091
Douglas	176	5,456
Leon-Weaver	947	29,357
Greenwood-Woodson Counties:		
Virgil	5,876	182,156
Seeley	4,749	147,219
Thrall-Burkett	7,610	235,910
Sallyards	1,673	51,863
Polhamus	5,074	157,294
Teeter	2,588	80,230
Miscellaneous	179	5,570
Cowley County:		
Rainbow Bend	8,504	263,624
Graham	255	7,905
Miscellaneous	3,449	106,919
Other counties:		
Harvey	117	3,627
Chautauqua	2413	74,803
Elk	763	23,653
Wilson	327	10,137
Montgomery	4,496	139,376
Allen	1,310	40,610
Neosho	840	26,040
Lyon	52	1,612
Miami	637	19,747
Franklin	631	19,561
Bourbon	64	1,984
Linn	453	14,043
Anderson	1,911	59,241
Labette	52	1,612
Russell	1,118	34,658
Rice	103	3,193
Douglass	44	1,364
Total October	89,349	2,769,813
Total September	89,623	2,688,690
Difference	274	81,123

MEXICAN FIELDS

(Continued from Page 40)

No. 104 has a crooked hole at 1,140 feet in shell; No. 107, drilling in gray lime at 1,770 feet; and in Lot 3, No. 126 is drilling in shell at 1,110 feet; No. 54, drilling in the San Felipe at 1,050 feet. In Lot 8, (Nacata) its No. 112 is in the San Felipe at 1,200 feet. In Lot 4, No. 113 is in white lime at 2,250 feet and No. 132, rigging. Mexican Gulf Oil Co.'s No. 24, Lot 1, drilling in gray and brown lime at 1,713 feet, and No. 68, same lot, drilling in brown and white lime at 1,912 feet; Mexican Sinclair Petroleum Corp.'s No. 72, Lot 2, is rigging; No. 85, same, continues waiting for permit; No. 61, Lot 3, drilling in the San Felipe at 1,705 feet; No. 62, same, is in a similar formation at 1,630 feet, and No. 98 is a derrick. Mexican Petroleum Co.'s No. 18, Lot 1 Cacalilao, cemented 8-inch at 1,300 feet in lime.

Transcontinental Petroleum Co.'s operations in Lot 4 follow: No. 107, cemented 8-inch in the San Felipe at 1,300 feet; No. 110, rigging; No. 125, drilling in lime at 1,790 feet; No. 129, drilling in lime at 2,150 feet; No. 134, drilling in shale at 1,055 feet; No. 135, in the same formation at 275 feet; No. 139, drilling in the San Felipe at 1,200 feet. In Lot 5, No. 127 is drilling in lime with the hole full of oil at 1,960 feet; and No. 133 is going to swab at 1,360 feet in the San Felipe. Three other tests are rigging in Lots 4 and 5. In the Paciencia, just north of Cacalilao, No. 5 is drilling in shale at 175 feet; No. 12 is in shale at 80 feet and No. 14 preparing to run 12½-inch at 860 feet in the same formation. Tamasopa Oil Co.'s No. 4, Lot 1 Cacalilao, is drilling in shale around 1,025 feet.

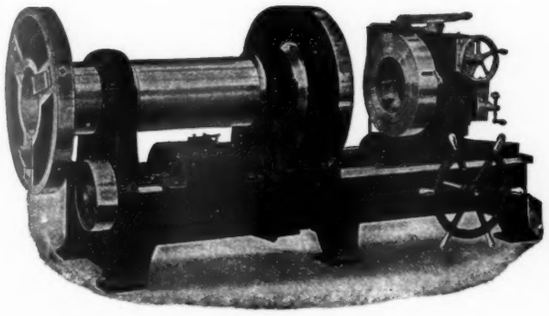
Panuco

In the older Panuco sectors of the northern fields, drilling operations follow: Credito Petroleum Co.'s No. 1, Lot 13 Lomas y Llanos is fishing in the San Felipe at 1,715 feet; No. 1, Lot 11 Tamante, drilling in gray lime at 1,995 feet; Caltex Oil Co.'s No. 6, Lot 6 Camelote, cemented 8-inch in lime at 1,655 feet. Panuco Boston Oil Co.'s No. 3, Lot 15, Lomas y Llanos, moving in 8-inch to set at 1,557 feet in the San Felipe. The Texas Co.'s No. 8 Cicero is putting on an oil saver at 1,891 feet, where the drill encountered considerable gas at 1,891 feet. Sol Oil Co. (Federal zone), No. 1 Alamo, cemented 8-inch in lime at 1,370 feet.

South Fields

In the south fields, Huasteca Petroleum Co.'s (Mexican Petroleum) No. 49 Cerro Azul is drilling in brown shale at 1,027 feet; No. 50, drilling in blue shale at 2,230

(Continued on Page 116)



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CHICAGO DISTRICT REPORTS GOOD BUSINESS

(Continued from Page 90)

tomers at $1 a barrel or a little more and there are two large refiners also making prices to get the business. Concern after concern has told the writer their quotations of $1.05 and $1.07½ have been turned down by buyers as out of line and in some cases they have been told the price they would have to meet to get the business and in few if any instances have they changed their bid. Of course this is the usual competition and even at $1 a barrel the refinery is making a good thing of it as prices go for fuel oil. The buyers are not so particular as to grade now and some of the refiners quote on 22-26 instead of 24-26. One buyer said when such a price was quoted him he simply knew the oil would not be up to 24 gravity but it did not matter if it was clean and had a low cold test. The Cosden supply of fuel oil is reported to have been cleaned out for the remainder of the year, the Santa Fe being the recipient of the oil. Cosden & Co. have not been very prominent in the fuel oil market of late, having substantial contracts for the bulk of the product. Every refiner that contracts for his entire output has more of an effect on the local market than is often realized. The railroads and carriers generally take a certain and steadily increasing percentage of the output. The local industries take another important and steady percentage. Kansas refineries ship little fuel oil out of the State. The remainder is what the refiner has to sell in the open market and —just for argument—if the total of free oil is say 25 per cent of his entire output and he adds 500 bbls. a day to his refinery runs to increase his output of gasoline he may be doubling the quantity of free fuel oil he has for sale. Of course the reverse is true and the Mid-Continent refiners by holding down their runs during the summer have prevented the accumulation of much free oil. If they have increased their runs as has been stated between 15 and 20 per cent during the last two months they may have doubled the amount of fuel oil they have to sell, that is the quantity in excess of their contracts. This is an aspect to the situation that has been pointed out by a purchaser of fuel oil.

Gas Oil Better

Gas oil is doing a little better. The trouble with much of the gas oil is that the cold test is too high for the really cold weather. It is used to some extent by buyers of heavy fuel oil to thin the latter and make it flow more rapidly in chilly weather but they want a cold test as low as the fuel oil. The takings of the utility companies on contracts are said to be steady but the new business is not large. Refiners are not cracking much gas oil now and some believe they will not need much this winter. There was a time when the refiner with a cracking plant was always a probable customer for gas oil. It is not so now.

Lubricants

Lubricating oils are not very active with the exception of the zero oils which are wanted. The supply seems to be abundant. The trade is not greatly pleased with the knowledge that the Roxana's new lubricating plant will be adding to the stocks very shortly. This will mean a lot of new and very active competition. The management of the Roxana Corp., believes products were made to be sold and they sell, some say, at a price.

Tank Wagon Steady

Tank wagon markets are steady and the amount of price cutting is unimportant. This condition is not likely to be changed so long as the relative positions of the refinery and the tank wagon markets are maintained. Little seems to have been settled regarding the marginal contract idea. The form presented by the N. P. M. A. seems to have gone by the board on the statement that it is in violation of the Sherman Anti-trust law. The great majority of the jobbers apparently have not come to any conclusion regarding this phase of the business and as nearly as the writer can arrive at the sense of the industry, the trade means to search out a way individually to solve the problem. Several jobbers have stated they consider a 4-cent margin would be fair to both sides. Several refiners evidently believe a 3-cent margin would be as fair as the sky on a June morn. The writer remembers the earlier days of the gasoline market when a 3-cent margin was considered very liberal. But then the margin between the tank wagon and the filling station price was 1 cent. It would be a very difficult thing to imagine a contract to which objections could not be made that under some set of conditions it would prove to be more advantageous to the one side or the other. The first consideration in any contract would naturally be that it provide a steady, assured supply and an equal demand of the product. The price must be fair to both and it cannot be fair to both if the actual market at the time the deliveries are made is not considered. In the long run the spot market results from the coordination of supply and demand. It takes both a buyer and a seller to make a market. The price at which goods are purchased is but one item in the success of a business and frequently reliability of quality and supply are of greater value to the distributer than the low cost at which the merchandise is bought.

THE PAPOOSE POOL MAY RIVAL CROMWELL AREA

(Continued from Page 23)

leases, the sand being so thoroughly impregnated with lime that it is hard and tight.

The Papoose sand, on the other hand, is practically free from lime in the wells drilled so far, except in one noted instance where the horizon is mostly lime. This is in the Kingwood Oil Co.'s offset to T. B. Slick's extension discovery, which was mentioned above. Its poor showing was attributed entirely to the extreme hardness of the producing formation in that location and this was remedied by shooting. In most of the Papoose wells, the pay formation is a pretty, brown oil sand, more coarsely grained than at Cromwell.

Some geologists look upon this development of hard tight sand only one location removed from a gusher with misgivings, as it forecasts the probability of similar conditions in other parts of the field and may make drilling hazardous from one location to another. Nearly every field has its tight spots, however, and the purity of the sand as a whole and the size of production in the normal areas offsets the fear of drilling a few small wells.

Stability of Production

The second condition found in the Papoose Field which is compared favorably with the Cromwell Pool is the stability of production. While the old part of the field in Section 4-9-9 was on the southwestern edge of the real pool, as appears proven now, and the sand could be drilled only a few feet due to the danger of running into water, wells in Section 3 have had a remarkably steady production and many of them have been producing for weeks with scarcely any variation while the daily average production per well in 10-8 has dropped just as steadily and by the end of the year will probably be close to the 200-bbl. a day mark.

Some of the Papoose wells that illustrate the foregoing statement are T. B. Slick and Gypsy Oil Co.'s No. 1 Hart in the SW NE of Section 3-9-9, which started originally at 1,776 bbls. several weeks ago and was last week averaging between 1,350 and 1,400 bbls. daily. Slick's north offset to this well make 60,000,000 feet of gas and 1,050 bbls. initially and last week was producing 850 bbls. regularly. The Cosden Oil & Gas Co.'s No. 6, west offset to the latter well, was still good for 225 bbls. regularly after two months, although its initial output was only 350 bbls., and the same concerns' No. 5, south of No. 6, was producing 1,000 bbls. steadily while it had an initial flow of 1,400 bbls. In Section 34-10-9, the Gypsy Oil Co.'s No. 1 Williams started at 1,885 bbls. and was doing 1,450 bbls. last week. It topped the sand at 3,289 feet and reached the oil at 3,300-15 feet.

Farther East

The wells farther east have not been producing long enough to tell what they will do after they settle down and while a couple of them have dropped off appreciably, one other has steadily increased for the last couple of weeks. This is the Kingwood Oil Co.'s No. 2 Sand, in the SW cor. of Section 35 10-9. It came in good for 2,836 bbls. when sand was topped at 3,304 feet and oil found at 3,307-10 feet, then dropped off to 2,500 bbls. But without being deepened or agitated or helped in any way, the production started climbing again and last Friday was up to 2,834 bbls. Across the line to the south, T. B. Slick's No. 1 Bruner came in for only 1,900 bbls. and had dropped down to about 1,750 bbls. It had sand from 3,298 to 3,313 feet.

The top of the sand was contoured on the accompanying map to show developments since the last map was published. Such a discrepancy in elevations was found in comparing those run by the various companies interested in the field that it is difficult to tell whether the data on which the contours were based is accurate or not. However, the map is presented as the most accurate interpretation that can be drawn with the aid of three sets of elevations and the sand records as reported to the Corporation Commission. On the recent wells, the sand records turned in by company scouts were used.

Some geologists believe that a fault exists across the northeast quarter of Section 4 and the southwest of Section 3-9-9, but others differ with them, saying that there is little basis for such an interpretation. The contours have been altered considerably in Section 3 due to the low sand elevation of the Midwest well in Section 33 which reached the pay at 3,342-47 feet, much lower than had been expected. At this depth, the production amounted to about 30 bbls. and there was a little water.

May Exceed Cromwell

The map bears out the predictons of many field men in the Holdenville area, that the Papoose Pool has a plenty of room for expansion and that it may reach a peak that will exceed the Cromwell Field's high point of a little more than 66,000 bbls.

The country as a whole is rough and hilly in that part of Oklahoma, but the northeast extension of the pool is located on comparatively level ground and the elevations of wells around Slick City do not as a rule vary more than a few feet. The difference in elevation between the Prairie gusher in Section 35 and the Gypsy producers in Section 34 is only 24 feet.

Slick City, the new town that has sprung up like a mushroom to care for the business involved in this new field, is fast overtaking the famous town of Cromwell in size and other accomplishments. It is perhaps the longest town of its size in the United States, stretching out for nearly 2 miles along the county line from the Cosden lease in Section 3 to the farthest east Independent well. The usual one-story board shacks of varied design and nondescript appearance line the "avenue."

The Papoose Field is to have a natural gasoline plant to take care of the large gas production there. It is being built on the Cosden Oil & Gas Co.'s lease in Section 3 by the Phillips Petroleum Co. and will have a minimum capacity of 20,000,000 feet of gas. Grading was started last Wednesday. A feature of this plant will be the operation of all auxiliary equipment by electrical power. Gas in the Papoose Pool yields about 1½ to 2 gallons per 1,000 feet.

Gravity of the Papoose crude is between 40 and 41 degrees. In the Cromwell Field, the gravity averages around 38 degrees.

The production of the Papoose Pool on Saturday was 25,500 bbls., of which amount 276 bbls. was coming from the old Gilcrease sector in Sections 17 and 18.

CEMENTING HEARING ON PROPOSED RULES

OKLAHOMA CITY, Okla., Nov. 22.—The Corporation Commission wants to know of Oklahoma oil operators whether the old 10-day rule for the hardening of cement used in casing off sands in wells may be abandoned safely in some instances and a substitute "cement accelerator" that hardens in 72 hours employed. This is regarded as the main item in a list of substitute oil and gas conservation rules submitted to oil operators by the commission, a hearing on which has been set for November 28 at the capitol.

A proposed rule provides for the cementing off of oil or gas bearing strata or seams with cement "to set the required time before drilling through the block." Another provides that "in all cases where casing or open hole is cemented, such cementing shall be accomplished by the most approved method and under supervision of a conservation officer. Cement shall be permitted to set for a period of 10 days after completion of cementing before operations are resumed, except in cases where a cement accelerator having the approval of the Corporation Commission, is used, operations may be resumed after 72 hours."

Another rule prohibits the drilling in of an oil or gas well with rotary tools, except in high-pressure gas territory, where the commission, by its own motion, may require drilling in with rotary tools. This rule requires the taking of cores of wildcat wells under 900 feet, unless oil or gas is found above that depth, where drilling is done with rotary tools. It requires that in all wells drilling with rotary tools casing shall be set and cemented at not less than 400 feet before drilling operations are resumed, and heavy water flows thoroughly cemented off.

DEATH OF J. B. GREGORY

PITTSBURGH, Pa., Nov. 22.—Word has been received at the general office of the South Penn Oil Co. advising of the death of J. B. Gregory, general manager of the New Domain Oil & Gas Co., a subsidiary of South Penn Oil Co., operating in Texas for the past five years. Mr. Gregory entered the service of the Forest Oil Co. more than 30 years ago and continued in the employ of that company until 1902, when it was absorbed by the South Penn Oil Co., and continued with the South Penn Oil Co. until about 1913 when he left to engage in the mining business in Canada, where he remained only a year or two, returning to the oil business as manager of the Muskogee Refining Co. of Oklahoma, where he remained until 1919 when he became general manager of the New Domain Oil & Gas Co.

Mr. Gregory's health has been failing since an attack of influenza about two years ago. On July 1 of the present year he was compelled to take a rest and joined Mrs. Gregory in their new home in Sierra Madre, Ca., where he died.

Mr. Gregory was aged 63 years and is survived by the wife and one son and two daughters.

CITY GAS CONFERENCE

COLUMBUS, Ohio, Nov. 22.—The municipal gas conference organized in Pittsburgh recently by officials from cities in Ohio, West Virginia, Kentucky and Pennsylvania, to consider the demands of natural gas companies for increased rates met here this week. The conference was formed in the belief that by pooling the financial resources of the various communities, expert accountants and consulting engineers could be employed to investigate the claims of the companies to better advantage.

BUNKER OIL ADVANCED

NEW YORK, N. Y., Nov. 24.—The Standard Oil Co. (New Jersey) advanced bunker oil 5 cents per barrel to $1.80 at New York City, Baltimore and Norfolk, and to $1.75 per barrel at Charleston, with lighterage extra.

ROCKY MOUNTAIN AREA

(Continued from Page 50)

Petroleum County in Montana is now a fact. This new county has been the aim of the inhabitants of western Fergus County for the past two years and contains the Cat Creek Field. At the recent election the vote for the new county carried a big majority for the division.

The big gasser of the Midwest Refining Co., near Cisco, Utah. has dropped in pressure and is now estimated at 20,000,000-foot flow. The Midwest is preparing to drill another well a short distance from the gasser.

On the Oil Springs structure near Lewistown, Mont., the Glenhoma Oil Co. found a showing of oil in the Quadrant sand at 915 feet and the well has shut down waiting for casing to shut off water in order to make a test of the show. The company is a local firm and the structure is a wildcat.

The Intermountain Water & Power Co. is placing bonds on the Denver market to help finance the plan to furnish water to the Salt Creek Field. The line will be about 8 miles long and is partly laid. This line will take its water supply from the Shiloh well on the Tisdale structure and deliver this water to different parts of the Salt Creek Field through a distribution system.

Sunburst Field Runs

The Illinois Pipe Line Co. averaged 4,256 bbls. of crude daily from the Sunburst Field in Montana during October with a total for the month of 131,936 bbls. At present that field is having trouble on account of the cold weather prevailing. Water lines are frozen and many of the drilling wells have had to shut down. Some wells are hauling water to drill with.

The Ohio Oil Co. brought in the best producer of the past week on the Norem lease, the Ellis sand came in at 1,472 feet and the well started off at 1,000 bbls. The Kewanee Oil Co. on the Putnam lease found the top of the Ellis sand at 1,440 feet and the well is estimated at 100 bbls. The Tri-State Oil Co. found the Ellis sand at 1,460 feet and is estimated at 60 bbls. while the Sweeny interests on the Maughan lease found the Ellis at 1,480 feet and have a well good for 100 bbls. natural. The Campbell Syndicate on the Rhinesmith lease found the Ellis sand at 1,548 feet and have a producer good for 60 bbls.

The deep test of the Potlatch Oil Co. on the east side of the Sunburst Field is drilling at 3,700 feet and making hole slowly. This is the first deep well to be put down in the Sunburst Field and has shown only gas in the deeper formation so far. The gas contains a large amount of sulphur.

New Colorado Test

Since the Cretaceous and older formations have proved disappointing in the main in Colorado, a test is now being planned for the Tertiary. The Cretaceous formations produce most of the oil in the Rocky Mountain region and the Carboniferous also produces some oil. These are both of marine origin, the strata having been laid down by water. The Tertiary lies on top of the Cretaceous and forms the surface over most of this region, in some places being several thousand feet thick. A well is to be drilled near the Wyoming-Colorado boundary in Colorado by New York capital to see if this Tertiary formation may carry petroleum.

The Union Oil Co. of California is getting ready to drill the Whittaker well at Fort Collins deeper into the pay. This well that found oil in the Dakota sand has been standing shut in for some time past except that some production has been flowed at intervals to relieve the pressure. The sand has only been drilled a foot or two and the company has been waiting on the completion of the pipe line and tanks to complete the hole. Everything is now in readiness and the well is expected to start drilling this week.

The Meabon Syndicate's well near Casper, Wyo., is drilling at 1,800 feet in the Carlile shale without any showing of oil or gas yet. This location is about 2 miles from the Casper city limits and is a wildcat that would create much excitement if it should come in a producer.

The Sinclair interests are reported as preparing to offer for sale the Sinclair Wyoming Oil Co.'s property in the Osage Field. This lease has a good production estimated at about 60 bbls. daily, but the cost of production for a large company to handle a small lease of this kind is such that the Sinclair interests find it more profitable to use the capital represented elsewhere. The other large firms having holdings in Osage are also all preparing to sell out for the same reason.

OKLAHOMA FIELDS

(Continued from Page 46)

The Magnolia Petroleum Co.'s No. 1 Cutfinger, NW cor. SE, Section 17-13-14w, was abandoned as dry at 3,688 feet. In the same county the Hoover Oil Co. is pulling 6⅝-inch casing to drill deeper in No. 1, NW cor. NE NW SE, Section 34-13-14w. It had been drilled to 2,377 feet.

Tulsa Operations

In Tulsa County the Broken Arrow Gas Co.'s No. 1-A Atkins, C W half NE SW, Section 14-18-14 was abandoned as dry at 1,350 feet; the same company has commenced drilling No. 1 Perkins, SE cor. NE, Section 15-18-14. Over the line in Wagoner County Allen and others drilled to 1,240 feet and shut down No. 1 Pike, CSL NW NW, Section 20-18-15; Moss and others abandoned as dry their No. 1 Taylor, NE cor. NW NW, Section 24-18-15. Dr. A. L. Corder's No. 1 McKellop, SW cor. SE NE, Section 25-18-15, got gas and a good spray of oil in sand at 1,474-82 feet. The well had not been completed but was good for 25 bbls. a day as it stood. The same owners' No. 1 Atkins, NW cor. NE SE, Section 25-18-15, had gas sand at 864-72 feet and a 6,000,000-foot gas production. The well was shut in. McEvoy and others' No. 1 McKellop, SW cor. Section 25-18-15 was dry and abandoned at 1,240 feet; No. 2 McKellop, NE cor. SE, Section 25, was a 1,000,000-foot gasser at 860-65 feet. It was drilled to 1,125 feet and then shut in. Hughes & Harder had a machine in for No. 1 Moody, SW cor. NW NW, Section 19-18-15. Dr. A. H. Corder's No. 1 White, NE cor. SW, Section 30-18-16 was abandoned as dry at 1,501 feet; Sewell & Corder's No. 2 Boudinot, SW cor. SE NW, Section 17-17-16 is good for 6,000,000 feet of gas from sand at 1,007-19 feet. It was shut in.

In the Mounds district, Creek County, L. B. Pratt and others spudded in No. 1, Lot 7, Block 19, NW cor. SE SW, Section 8-16-12.

In the Coweta district, Wagoner County, Knox and others' No. 2 Coweta Mission, SE cor. SW NW, Section 17-17-16, was shut in as a gasser, good for 6,000,000 feet from sand at 1,022-36 feet; Sewell Petroleum Co.'s No. 2 Childers, CWL NE NE, Section 30-17-16 was dry and abandoned at 1,185 feet.

In the Mounds district, Creek County, J. H. Hildt and others' No. 1 Maxwell, CEL NE SE, Section 7-16-12, made 300 bbls. a day from sand at 2,062-86 feet; Dixie Drilling Co.'s No. 1, Lot 6, Block 12, NW cor. SE SW, Section 8-16-12, made 150 bbls. a day naturally from sand at 2,021-63 feet; Jones and Cravens' No. 1, Lot 7, Block 21, C E half NE SW, Section 8-16-12, started at 150 bbls. a day from sand at 2,130-68 feet.

The Mutual Oil Co. was ready to start drilling No. 3-A Partridge, NE cor. SW SW, Section 5-19-12, Tulsa County; Shaffer Oil & Refining Co. was rigged up on No. 3 Partridge SE cor. NW SW, Section 5-19-12. The Echo Oil Co.'s No. 1-A Grayson, SW cor NE SE, Section 5-19-12, made 50 bbls. the first day after a shot in sand at 1,930-45 feet; Bruner Oil Co.'s No. 2-A Partridge, CNL SE SW, Section 5-19-12, was ready to start drilling; Sand Springs Home,'s No. 8-E Bruner, SW cor. SE SW, Section 6-19-12, drilling below 600 feet; Thornton and others swabbed 30 bbls. the first 12 hours from their No. 1-A Berry, CSL SE SW, Section 20-19-12, from sand at 2,066-92 feet.

The Frates Oil Co. has a 150-bbl. initial producer in No. 2 McHenry, NW cor. SW, Section 1-17-14, from sand at 1,269-80 feet; C. A. Wade's No. 4 Drew was shot in sand at 1,280-92 feet and started at 150 bbls. a day; Suppes & Noble's No. 1 Bertholf, C NW NW, Section 31-17-13, was dry and abandoned at 2,338 feet.

The Shaffer Oil & Refining Co.'s No 2 Partridge, CSL NW SW, Section 5-19-12, made 25 bbls. a day from sand at 1,979-85 feet.

The Hartman & Perry's No. 2 Mission, NE cor. SE SE NE, Section 18-17-16, Wagoner County, 6,000,000 feet of gas, shut in from sand at 1,015-26 feet.

KANSAS FIELDS

(Continued from Page 46)

33-24-9; Carter Oil Co., a rig up for No. 1 Wiggins, SW cor. NE SE, Section 27-24-9; Fontaine and others had 1,000 feet of oil in the hole in No. 1 Houston, NE cor. SE, Section 27-24-9, from sand at 2,148-2,200 feet. Rigs are up for Phillips Petroleum Co.'s No. 2 Teeter, C NE SW SW, Section 15-23-9; Skelly Oil Co.'s No. 3 Teeter, C NW NE SW, Section 15; No. 4 Teeter, C NW NW SW, Section 15; McGinnis & Bitler's No. 1 Teeter, C SW SE NW, Section 15; No. 2, C NW SE NW, Section 15; No. 3, C SW NE NW, Section 15; Empire Gas & Fuel Co.'s No. 11 Teeter, C NE NE SE, Section 16-23-9. The Tidal Oil Co. has commenced drilling No. 3 South, C NW SE SW, Section 22-22-11. The Phillips Petroleum Co. is below 300 feet in No. 2 Cravett, C NE SW SW, Section 22-22-11. The York State Oil Co. was drilling ahead after passing through an oil sand at 1,934-69 feet, which had a good showing, in No. 9 DeMalorie, SE cor. NE SW, Section 32-22-11. The Eugenia Oil Co. has a rig up for No. 1 Neer, SW cor. SW NE, Section 36-23-11. Simmons & Bucke have a rig up for No. 1 Derbyshire, NE cor. NW SE, Section 13-22-10; McGinnis and others, a rig for No. 1 Kipfer, SE cor. SW NE, Section 13; Skelly Oil Co., a rig for No. 1 Kipfer, SE cor. SE NW, Section 13; Sinclair Oil Co., spudding No. 7 Browning, C NE NE SE, Section 19-22-10. Caldwell and others, a rig for No. 1 Hartley, NW cor. NE, Section 1-23-9; Mission Oil and others drilling below 300 feet in No. 42 Thrall, C SW, Section 28-23-10; Mid-Kansas Oil Co., drilling at 1,940 feet in No. 8 Martindale, CEL SW, Section 32-23-10.

Smith & McGinnis abandoned at 1,645 feet their No. 1 Wright, SW cor. SE NE, Section 32-24-13. Milligan and others' No. 2 Berne, C NW SW SE, Section 22-22-11, started at 120 bbls. after a shot at 1,929-68 feet.

Wildcat Results Discouraging

Emerson & Carey's No. 1 Bush, NE cor. Section 7-20-6w Rice County, was dry and abandoned at 3,565 feet.

Childs, Hipple and others' No. 1 Sallee, NW cor. SE, Section 3-22-6, Chase County, was dry and abandoned at 3,815 feet.

Jennings, Fells and others' No. 1 Mohr, SE cor. SW SW, Section 2-25-6w, Reno County, was dry and abandoned at 3,522 feet.

In Osborne County the Delhi Oil Co.'s

(Continued on Page 114)

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LEO KORETZ ARRESTED IN PANAMA OIL CASE

CHICAGO, Nov. 25.—The arrest in Nova Scotia of Leo Koretz, wanted here in connection with his operations in "the Bayano Oil Co." supposed to own valuable oil lands south of the Panama Canal, ends an almost two years' search. It is charged that his operations cost investors $10,000,000 and that when he fled he took with him $2,000,000 in cash. A feature of the case was the reported reluctance of Koretz to sell stock in the enterprise, which only whetted the desire of outsiders to get in. Investors besieged his offices night and day and threw their money over the transom of his main office door with pleas that he invest it. After he had gathered in millions of dollars, it occurred to a group of investors to make a trip to the marvelous Bayano country and look over the proposition. Koretz encouraged the plan and arranged a special steamer and letters of introduction for them. About the time they were swinging into the Panama Canal, Koretz quietly faded from view. The committee found only a barren waste. The officials to whom they bore letters of intrduction could not be found.

It is known Koretz went from here to New York and was believed to be living in luxurious quarters there. Then he was reported hiding in Europe, in South America, even in Chicago.

Since last March, it is said, Koretz had lived in Nova Scotia, where he purchased "Pinehurst," a historic residence near Liverpool. He paid $18,000 for the property and has made additions costing $35,000. He represented himself as a man of wealth who recently had suffered a severe illness. He wore a full beard, which he explained as necessary because of an infection of the teeth and jaw. He became popular and had agreed to preach a sermon shortly in the local church. He made frequent visits to Halifax, where he became a member of the Nova Scotia Yatch Squadron and his entertainments were on a lavish scale.

When informed he was under arrest, Koretz said: "All right boys, you'll have no trouble with me."

ATLANTIC CITY GETS NATURAL GAS MEETING

The twentieth annual convention of the Natural Gas Association of America and the Association of Natural Gas Supply Men, Inc., will be held in Atlantic City, N. J. The definite date for the convention has not as yet been decided but it probably will be sometime in May.

KANSAS FIELDS

(Continued from Page 111)

No. 1 Dorman, SW cor. Section 20-10-11w, was a failure at 3,470 feet.

In Barton County Huffine and others abandoned No. 1 Bock, NE cor. SE NE, Section 17-19-11w, at 1,615 feet and have started another test on the same location.

The Seward Oil & Gas Co.'s No. 1 Sealy, C W half E half NW, Section 20-33-33w, Seward County, was abandoned at 2,427 feet.

Bullock & Pierce's No. 1 Harborough, SE cor. NE, Section 24-13-13w, Russell County, was abandoned after having been spudded in.

John Harron and others have a rig up for No. 1 Kasper, NE cor. NW NE, Section 6-14-9w, Ellsworth County.

The Frost Drilling Co. have spudded in No. 1 Hull, SW cor. NW SE, Section 25-4s-16w, Phillips County.

The Marland Refining Co. has commenced drilling No. 1 Law, SE cor. NW SW, Section 30-6s-17w, Rooks County.

The Mississippi Valley Oil Co. was running 10-inch pipe at 1,790 feet in No. 1 Kyser, C E half Section 9-11-22w, Trego County.

The Marland Refining Co. has commenced drilling No. 1 Reager, C SE NW NE, Section 25-2-26w, Decatur County.

In McPherson County, J. T. Severs has a rig up for No. 1 Anderson, SW cor. Section 3-17-2w, and Young and others have a rig on the ground for No. 1 Anderson, NW C Section 3-18-2w.

In Lincoln County, Pope, Powell and others abandoned No. 1, NW cor. SE, Section 22-11-6w, at 650 feet.

In Rice County, the Rino Oil Co.'s No. 1 SE cor. NW, Section 35-13-6w, was abandoned as dry at 3,740 feet.

In Jewell County the Union Oil Co. of Colorado spudded in a test SE cor. Section 5-23-1, and then shut down.

Pryor & Lockhart have abandoned the location for No. 1 NW cor. NE SE NW, Section 1-19-7w, Rice County.

N. LOUISIANA-ARKANSAS

(Continued from Page 48)

abandoned at 3,378 feet, is going back into the hole to complete a deep test.

S. S. Raymond and others is drilling in broken lime at 2,730 feet in No. 1 Coyle, Section 21-21-10, and Tidal Oil Co. is rigging up to drill No. 1 Gleason, Section 28-21-10.

Springhill District

The opening up of a new gas territory, with indications of oil, in the north end of Webster Parish, has resulted in considerable activity in the neighborhood of the Lloyd Harris well, the discovery well of this district.

Arkansas Fuel Oil Co. is rigging up to drill No. 1 Frazier, Section 27-23-11.

Belchic & Laskey are drilling plug in 6-inch at 2,590 feet in No. 5 Pine Woods Lumber Co., Section 33-23-11, and arranging to test.

Butler & McMurray are rigging up to drill No. 1 Allen, Section 35-23-11.

W. L. Haehnlen, trustee, is drilling in rock at 840 feet in No. 1 Roberts, Section 9-23-10.

The Texas Co. is down 50 feet in a test on the F. M. Tinsley land in Section 35-23-10.

Between the Springhill and Cotton Valley districts, the Bethany Oil & Gas Co. is running core barrel at 2,622 feet in No. 1 T. R. Riley, Section 1-22-10, and derrick up for No. 2 Riley, Section 6-22-9.

Six miles south of the Cotton Valley district, McDowell and others are drilling in lime at 2,070 feet in No. 1 Hortman, Section 15-20-10.

Bossier Parish

In the Elm Grove district, Arkansas Natural Gas Co. set 6-inch casing at 1,895 feet in Van Hoose A-3, Section 31-16-11; Davis & Hanby, drilling in gas rock at 950 feet in No. 1 D. J. McAnn, Section 31-16-11; Palmer & Hanby set 10-inch at 250 feet in No. 4 McAnn, Section 31-16-11; Palmer Corporation, rigging up to drill Hodges B-6, Section 25-16-12, and Standard Oil Co. drilling in hard sand rock at 1,790 feet in No. 4 J. T. McDade, Section 31-16-11.

Skannall and others have gone back into their test on the Roscoe land in Section 14-17-12, completed in September at 840 feet with an estimated gas volume of 500,000 feet, and will drill deeper.

Caddo Parish

Dixie Oil Co. is drilling at 175 feet in No. 3 La State and has derrick up for No. 4, Section 13-21-16; Fortuna Oil Co., drilling at 1,755 feet in No. 13 Doan Thigpen, Section 3-20-15; Gulf Refining Co., derrick up for No. 219 Ferry Lake, Section 22-20-16, and The Texas Co. is drilling at 2,655 feet in No. 1 Federal Jeems Bayou, Section 15-20-16, and has a fishing job at 1,950 feet in Hobbs A4, Section 28-21-15.

Richardson Oil Co. is drilling at 1,950 feet in No. 1 Bickham, Section 15-18-15, north of Cross Lake.

Lewis Oil Corp. is drilling at 500 feet in No. 5 Caddo Mineral Land., Section 24-23-15, 5 miles north of Vivian.

In the Waskom district, Glassell & Myers set 14½-inch easing at 50 feet in No. 1 Florsheim, Section 9-17-16, and Waterman Drilling Co. derrick up for No. 1 Bryson and drilling at 1,080 feet in No. 2 Waterman, Section 18-17-16.

Claiborne Parish

Claiborne Lincoln Syndicate is drilling at 50 feet in No. 3 Fields, Section 22-19-5, 5 miles north of Arcadia.

El Dorado Chief Oil Co. set 8-inch casing at 2,103 feet in No. 1 McElwee, Section 13-22-7, 7 miles northeast of Homer.

J. P. Evans and others have

up for No. 1 Taylor in Section 6-19-5, 11 miles southeast of Homer.

Woodley & Collins are drilling at 2,200 feet in No. 1 Fortson, Section 28-21-5, 8 miles east of Homer.

Tarver and others are drilling at 1,975 feet in No. 3 Palmer, Section 3-11-14, in the old Spider district, 12 miles east of Logansport.

La Salle Parish

The Bur Ban Oil Co. is drilling at 2,085 feet in No. 2 Urania, Section 21-11-2e, 5 miles north of Urania.

Morehouse Parish

Ladel and others are drilling at 2,150 feet in No. 3 White, Section 33-20-5; Natural Gas Producing Co., rigging up to drill No. 4 Tensas Delta, Section 3-21-4, and Stovall Drilling Co., drilling at 2,000 feet in No. 1 fee, Section 27-21-4.

Ouachita Parish

Consumers Gas Co. is drilling at 1,700 feet in No. 1 Collins, Section 10-19-5; Ladel and others drilling at 2,140 feet in No. 31 fee, Section 20-19-5 and Montgomery and others drilling at 1,725 feet in No. 1 Carter, Section 12-9-4.

Southern Carbon Co., bailing to test No. 39 fee, Section 29-19-5, at 2,250 feet; set 6-inch at 2,145 feet n No. 41 and 12½-inch at 195 feet in No. 42 fee, Section 7-19-5, and United Oil & Gas Co. set 8-inch casing at 910 feet in No. 2 Cole, Section 36-20-4.

Union Parish

Jones-Walker Oil Co. is down 1,605 feet in No. 1 Feazel, Section 6-19-2e, between Monroe and Farmerville.

Simms Oil Co. is building derrick for No. 1 James in Section 16-22-3w, 5 miles north of Bernice.

Columbia County, Arkansas

In the Stephens Field, Magnolia Petroleum Co. set 6-inch casing at 2,110 feet in No. 2 Watson, Section 36-15-20.

Moore and others are drilling at 1,055 feet in No. 1 Fullenweider, Section 12-17-22, 5 miles west of Magnolia.

Russell & Kent are drilling at 2,220 feet in No. 1 Emerson, Section 7-19-19, 14 miles southeast of Magnolia, and 20 miles south of the Stephens Field.

Hempstead County

J. G. Wooten has derrick up for No. 1 Walker in Section 22-11-24, 7 miles north of Hope.

Lincoln County

Cambrian and others are drilling at 1,810 feet in No. 1 fee, Section 3-9-8.

Nevada County

Ames and others drilled into 10 feet of sand at 1,173 feet in No. 1 E. E. Womack, Section 10-14-21, and arranging to pump.

Greeson and others set 10-inch casing at 20 feet in No. 1 McKinney, Section 10-14-21.

Ouachita Valley Oil Co., set 10-inch at 290 feet in No. 1 Phillips, Section 30-14-20.

Smitherman-McDonald set 8-inch casing at 1,140 feet in No. 4 Womack, Section 10-14-21.

Zink and others are arranging to test 40 feet of broken formation at 1,020 feet in No. 1 Graves, Section 22-10-23.

MERCHANDISING OF DOMESTIC FUEL OILS

(Continued from Page 103)

our burner." So Mr. Burner man puts the blame on Bill's oil, and Bill is discredited with a customer. They make Bill take back his oil and then get a fill from Tom Brown. Horrors! Tom's oil smokes too. Head scratching by the burner man. Gosh! Ain't oil just oil? Then began the worthy work of making that burner flexible so that it would burn any furnace oil within reasonable limits. Some have succeeded, others are as yet a long way from it.

About that time the B. T. U. was weaned and has developed marvelously since.

As each burner manufacturer pursued his good work of making his burner ambidextrous, so to speak, he, with a full knowledge of the big talking point offered by the B. T. U., sees how low a Baume gravity oil he can get away with in his particular burner. He finds, for instance, that he can just get away with a 38 gravity without trouble. Another finds 30 gravity in his minimum, and every half degree of Baume gravity in between and a considerable distance each side has its burner adherents, and each burner man expects the oil jobber to stock the particular gravity and specification oil most efficiently suitable for his particular type of burner.

The tendency of each burner manufacturer has been to perfect his burner to the point of efficiency handling low gravity oils, on account of the famous B. T. U. Fine, and the point is well taken provided they first ascertain that a general supply of that particular oil is easily and at all times available. Furthermore, they must know what oil will give the greatest satisfaction to the average user. The burner man who recommends a low gravity oil for general use that his laboratory experts can burn nicely due to their superior detailed knowledge of the burner will no doubt grow sadder and wiser, but incidentally as the oil man is always to blame, an oil jobber has been discredited with a customer.

Little Cost Argument

Heating homes with oil is still a new art. It must not be considered an improvement on coal burning. It started an epoch of its own. The day of a cost comparison with a coal burner is passed, or just about passed. One can imagine the arguments the early passenger agents used to get customers to abandon the stage coach and ride on their new 15-miles-an-hour wonders. Lots of us here remember the early auto salesmen's arguments pro and con, automobile or horse drawn carriage.

Today the oil burner is out of swaddling clothes and the comparative cost argument is dying down. We of the oil industry have been hoping and praying for years for successful oil burners, and we should be working in a spirit of closest affiliation with the burner industry. Individually, we may be. Industrially, we certainly are not.

Recently I went into details with several of the largest refiners in the country regarding the possibilities of furnace oil and to get their practical opinions as to what furnace fuel the oil industry could most easily (therefore economically) make in quantity assuming this furnace oil business grows to the proportions reasonably contemplated. The answer is an oil of about 35 Baume gravity with about zero cold test. I told them a flash of 180 to 190 was about the maximum, and they advised this could be managed. Color is no object provided the oil is clean. This oil represents the crude cut coming after the kerosene cut and down to the point at which the wax starts to come over and represents approximately 12 per cent of an average Mid-Continent crude. This percentage could be materially added to in case the price of this distillate, as compared with gasoline, reached a point at which it would be more profitable to the refiner to sell his cracking distillate as furnace fuel rather than continue recycling it and making it into gasoline. A contingency of this kind would mean a possible addition of 10 per cent, making a possible total of about 22 per cent of the crude, and that would give us all the furnace oil we are ever likely to need.

Now, Mr. Burner Manufacturer, if you want the widest distribution with average fair fuel price, see that your burners will handle the above fuel cleanly and satisfactorily to your customer. While you are able to get practically any gravity you want in the large cities, the enormous country districts are going to limit you sooner or later to the above oil. In the beginning the small town oil jobber will, no doubt, give you kerosene, at a distillate price if necessary, until the volume of business warrants the installation of a distillate tank. No jobber supplying his share of a small community can afford more than one distillate tank, therefore one distillate. He can, of course, blend up with kerosene, but this raises his cost. That is as far as any sensible jobber with any system of cost accounting should go.

Furthermore, your large centers would prefer one grade. It simplifies their storage problems, and that means lower costs and greater efficiency.

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KEYSTONE Copper Steel has more than DOUBLE the rust-resisting qualities of the ordinary types of steel.

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At the end of the test period only 38 sheets had not failed. All 38 were copper-bearing steel, and of the 38 sheets, 31 were KEYSTONE Copper Steel.

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Today *The Larkin Line* is more complete than ever, but it still has its basis in the one characteristic we have always held fundamental—*thorough reliability in the performance of the duty for which intended.*

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Our new catalogue No. 25 describes The Larkin Line. May we send you a copy?

LARKIN & CO.

BUTLER, PA., U. S. A.

MEXICAN FIELDS

(Continued from Page 108)

feet; No. 51, in basalt at 736 feet. Other tests are unchanged since the last report. Mexican Eagle Oil Co.'s No. 10, Lot 148 Amatlan, the test that has been giving trouble by caving, is cleaning out to the bottom, 2,210 feet in gray lime. Its No. 43, Lot 260 Amatlan is drilling in shale and boulders at 550 feet; No. 19 Cerro Veijo is drilling in shells at 1,935 feet; No. 6, Lot 161 Chinampa, is drilling in shale at 160 feet.

Up in San Diego, famous as the field that brought in No. 3, better known as "Dos Bocas," Mexican Eagle Oil Co.'s No. 7 is showing considerable gas at 1,782 feet in a limestone. The test was carrying 6-inch and the gas bridged it and commenced to come up between it and the cemented 10-inch. It is now cleaning out the bridge to relieve gas pressure and send the drill deeper. From the depth and formation and heavy gas pressure it looks as if this might prove a well and so bring "Dos Bocas" back on the map.

Agwi Companies' No. 23, Lot 2 Chiconcillo, looks like a small well at 2,171 feet from reports just received. The drill is 4 feet in the Tamasopa at the depth noted and a test is being made for production. Cortez Oil Corp. spudded in No. 11 Aguada. Hudson and others' No. 1, Lot 5 Metlaltoyuca is changing over to standard tools at 650 feet, where a very hard lime was encountered and a small showing of gas. Is land Oil Transport Co.'s No. 4, Lot 96 Chinampa is drilling in shale at something less than 1,000 feet.

Miscellaneous Tests

At Ebano, in the northern fields, Mexican Petroleum Co.'s No. 29 Chijol, drilling in a green lime at 1,210 feet. In its La Dicha fraction, No. 39 is drilling in shale at 405 feet; No. 44-A is running 10-inch at 1,200 feet in lime; No. 44-B, rigged, waiting permit; No. 49, drilling in shale at 650 feet; No. 50, cemented 8-inch in blue lime at 1,500 feet; north of the Tamesi River, Mexican Petroleum's No. 1 Tancasneque is drilling brown lime at 3,015 feet. In the Chapacao sector, No. 1 is drilling in white lime at 2,170 feet; No. 2, drilling in the Tamasopa at 2,475 feet; No. 3, drilling in a lime at 1,590 feet; No. 6, rigging. In its Mendez fraction, No. 2 is drilling at 180 feet and No. 3 drilling in shale at 1,080 feet. Along its railway right of way, National Lines' No. 1 Chapacao is waiting for cement to be tested around 8-inch at 1,201 feet in gray lime; and No. 2 cemented 8-inch in the same formation at 1,200 feet.

At Los Esteros, American International Fuel Co.'s No. 15 is drilling in white lime at 3,085 feet and No. 16 is spudding at 50 feet in clay.

At Chila and Corcovado, La Corona Petroleum Co.'s No. 1 Chila is fishing a drill stem in gray lime at 2,080 feet; No. 3, Lot 6, Corcovado, drilling in shale at 400 feet, and No. 4, Lot 1 is a derrick.

In the Topila district, Cortez Oil Corp.'s No. 1 Cayuayotes cemented 6-inch in a hard sandy gray shale at 1,514 feet. East Coast Oil Co.'s No. 9, Lot 29 Tamboyoche cemented 8-inch in shell at 1,700 feet. National Lines (Federal zone) No. 14 Paciencia de Aguacate, drilling in the San Felipe at 1,630 feet. James E. Carpenter, who has taken over the old Topila Petroleum Co.'s lease in the Topila Field proper, is moving in for a test on the Ramirez, south of the small well finished by the company in question in 1912.

In the Marland Field, Cia. Petroleum Franco Espanola, No. 15 Limon, is drilling in shale and lime at 1,665 feet; No. 18 is in a hard sandy lime at 1,945 feet, and No. 21 is a derrick.

International Petroleum Co.'s No. 1, Lot 6 Corcovado, is drilling in gray lime at 2,00 feet; and No. 1 El Naranjo, west of Ebano, is preparing to cement 6-inch at 1,800 feet, presumably in the San Felipe.

At El Barco, Mexican Gulf Oil Co.'s No. 23 cemented 8-inch at 1,294 feet in a gray lime; and in Corcovado, No. 3, Lot C is drilling in shale at 340 feet.

Power and others' No. 1 Garruche-Corcovado is drilling in the San Felipe at 1,825 feet; his No. 2 is something less than 1,000 feet in shale. Tamasopa Oil Co.'s No. 1, Lot C Corcovado cemented 6-inch in a gray lime at 1,585 feet; No. 2, same, is drilling in shale at a nominal depth.

At Caracol, Venable and others' No. 1, Lot 73, drilled 2,700 feet, where operations have stopped for the time being in a rotten limestone.

RECLAIMING MATERIALS IN THE OIL INDUSTRY

(Continued from Page 20)

clamation was $21,296.30 or 20.8 per cent of the value of the reclaimed materials.

The big advantage of operating salvage in connection with a central warehouse, lies in the fact that doubtful secondhand material no longer comes into the warehouse, where in the past, field men objected to accepting materials that might otherwise serve the purpose intended, because of the general appearance, which resulted in a psychological rejection of a supply that would otherwise serve every purpose if it had been put into use.

When operating departments return used materials to warehouses from leases or elsewhere, for credit, the material is not accepted unless it is in every way in condition for reissue without raising the question of appearance or serviceability. When doubtful, it is passed through the salvage section of the warehouse and reconditioned and credit is not given until the cost of same is known. Generally, in these cases, the only labor required is for cleaning, greasing of threads and a good coat of paint.

System of Operation

The general system of receipt of material to be salvaged and the transfer into warehouse stocks when reclaimed, is briefly as follows: The miscellaneous apparently junk materials, which, in a great majority of cases in the past, were loaded on cars and shipped to junk dealers at $5 to $7 per ton or less, is brought into salvage from operating leases or refinery, in truck loads and dumped on the outside, where it is thoroughly examined and pieces which have been damaged beyond repair or future use, are thrown in scrap bins for sale at the best market quotations.

The balance is listed as to items for credit, after a depreciation depending upon general condition, with an average of 25 per cent of new material of like kind by items.

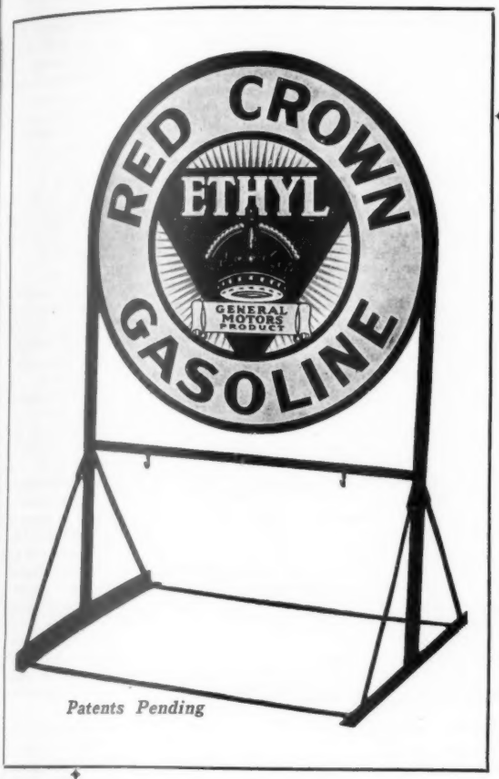
This material is then thoroughly broken down or taken apart, including valves and fittings, and then goes on the wash rack, where naphtha and soda are used to clean all dirt, oil and acid therefrom and after necessary repair, is placed on the bench for assembly, single parts and fittings going direct to the paint table. Valves, etc., are then tested to required specifications, painted and the threads well greased.

Finished materials are allowed to accumulate and are transferred into warehouse stock semi-monthly and salvage is credited with 100 per cent of current market value of the goods.

It has been discovered that it is important that every piece of material coming into warehouse stock should be painted and well greased so that in every respect, the product looks like what is desired, namely, new supply material. This system of operating is resulting in our having all oil industry materials stored in the central warehouse looking like new and what is more important, just as serviceable.

As a closing argument in favor of general conservation and in particular, so far as it concerns the reclamation of oil industry supplies, the writer believes such a policy is good for the country and he believes he has demonstrated that it is the thing to do, from the standpoint of the oil industry official, who is concerned in doing the things necessary to secure adequate results with minimum cost of operation, and such effort cannot fail of endorsement when your stockholders see just what it means in dollars and cents.

Why not make the dollar saved in the oil industry worth as many cents as in any other activity the world over?



Patents Pending

CHALLENGER

Lawn or Sidewalk STAND

——*Challenges Attention*

It's one thing to have a corking good sign and quite another matter to make that sign sit up and speak!

The Challenger Stand is designed especially for service stations where it is desired to have metal or lithographed signs displayed in approved fashion.

The stand shown to the left is our lawn or sidewalk type. There are also various styles of Challenger flange or bracket types.

The Lawn or Sidewalk Stand is constructed from a solid Tee Member running from foot to foot without a break, thus affording secure rigidity. It supports two signs—a circular sign 30" in diameter and below this a rectangular sign 12" x 24" for appropriate slogans or advertising different products.

Finished in oven baked enamel, practically rust-proof and immune to climatic conditions.

Shipped in knocked-down condition, easy to assemble.

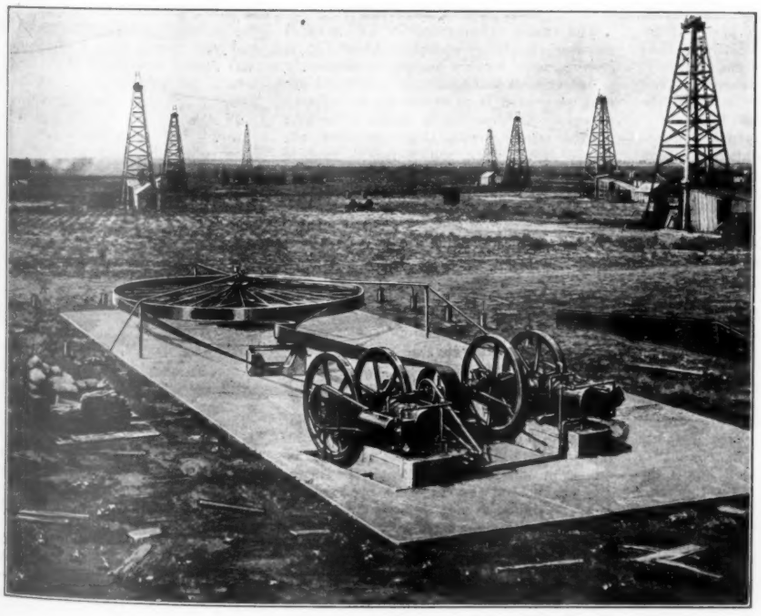
THE SALESMAN WHO DIRECTS BUSINESS YOUR WAY

Orders placed NOW, will insure you of delivery before the large Spring Demand sets in.

Special designing submitted on request.

MICHIGAN FORGE & TOOL COMPANY

7360 Richmond Ave., Detroit, Mich.



Reid Twin Engine Installation

Two Reid 40 HP. Gas Engines and a Reid Type PW All-Metal Band Wheel Power comprise the pumping plant here illustrated.

The twin engines, two forties, are connected by a shaft and two cut-off type clutches. This arrangement allows the engines to be operated independently of one another, a feature which insures practically constant service.

The power is the Reid Type PW Band Wheel Power, with 24-foot wheel, 24-inch throw eccentrics and force feed oiling system with all lubricated surfaces protected by dust covers.

This plant is housed in a steel frame power house with concrete floors and has already given nearly one year's satisfactory service and promises of many more.

Write for additional information on these twin engine pumping plants

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U.S.A.

BRANCHES AND AGENCIES—Marietta, Ohio; Logan, Ohio; Newark, Ohio; Ft. Recovery, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 708 Pacific Bldg., Los Angeles, Cal.; Oklahoma, Kansas, Texas, Arkansas and Wyoming, Frick-Reid Supply Company, Tulsa, Oklahoma and Branches.

BRANCH SHOP, TULSA, OKLA.

There Is Only One Genuine Trimo Thin Wheel

—but there are any number of cheap imitations placed on the market with the deliberate intention of deceiving you.

The genuine has the name TRIMO stamped on its hub. Look for it! It is the only way to make sure that your pipe cutter wheels will make a quick, clean cut and will hold their edge, saving you time and money in the long run.

Be sure you use a TRIMO Pipe Cutter Frame. It has a replaceable nut to adjust the handle screw, instead of a thread in the frame or roll-block, so that it outlasts a number of ordinary frames.

Your dealer sells genuine TRIMO Pipe Cutters and Thin Wheels. It pays to insist on TRIMO.

TRIMONT MFG. CO.
Roxbury, Mass.

TRIMO

7450

GREAT DEVELOPMENT OF NATURAL GASOLINE INDUSTRY DESCRIBED

(Continued from Page 88)

quality and there were many plants constructed of various design and considerable financial loss was encountered before it was learned that only "wet" gas containing two or more gallons of gasoline per 1,000 feet could be treated profitably.

These plants were generally built by producers who made provision to handle only such gas as was produced on their own leases, and it was not until some years later that gas was purchased for the purpose of gasoline extraction. As the business became better established and the market for the product was enlarged, the manufacturers commenced buying "wet" gas from adjoining leases.

The industry grew steadily until in 1911 it became of sufficient importance to attract the attention of the United States Geological Survey, and it was for that year that the first production figures were recorded by that body.

As early as 1905 applications were filed for United States Letters of Patent covering the extraction of gasoline from natural gas by the absorption method, and up to 1911 a great deal of experimental work was carried on by various operators. In 1913 a plant especially designed to operate under the absorption method was constructed at Hastings, W. Va., and this was probably the first plant of its kind of any consequence.

The growth of the industry from 1911 to the present time has far exceeded any early expectation, the production today being equal to approximately 10 per cent of the total gasoline manufactured from petroleum and its products by all processes.

Modern Plants Efficient

From the crude, inefficient plant of the early days, capable of extracting only a small percentage of the gasoline content, we have the modern plants, both compression and absorption, designed and constructed on scientific principles, many of them monuments to the development of the science of which the industry may be justly proud.

The early plant was operated merely as a side line, whereas the plant of today is operated by men especially trained in this particular branch of the industry, their knowledge being evidenced by the recovery of 95 to 100 per cent of the gasoline content of the gas.

During the past three years a large number of compression plants have been converted to the oil absorption type. The change was found desirable by many companies because of the improvement it made in the product and because of the reduced cost of manufacture. In compression practice, the extraction of the gasoline carried by the natural gas in suspension is accomplished by low stage compression to approximately 30 pounds, following by high stage compression to from 200 to 250 pounds, the gas after each compression being passed through condensing coils, where the gasoline is precipitated out of the gas while held under this pressure. In the oil absorption process the gas is brought into intimate contact with absorption oil, commonly called mineral seal oil, which has a decided affinity for the light gasoline carried in suspension by the gas. After the absorption oil has extracted the gasoline from the gas, the mass is submitted to steam or fire distillation, where the light gasoline is driven off in the form of vapor and then passed through water cooled coils where it is condensed. In most plants the gas which has been partially denuded of gasoline in the absorber is passed to a compressor and subsequently to a condensing coil where the lighter gasoline fractions, not retained by the absorption oil, are recovered.

Increase in Production

For the year 1911, the United States Bureau of Mines reported the production of natural gasoline to be 7,400,000 gallons. The industry was about seven years old then. There was about $2,000,000 invested in it and the production for the whole year was less than one-third of the gasoline we now consume on a hot midsummer day. Today, only 13 years later, there are about 1,200 plants with between $150,000,000 and $200,000,000 invested in the industry and the production for this year will probably be between 900,000,000 and 1,000,000,000 gallons.

In 1911 when the natural gasoline industry was getting a start there were 639,000 automobiles in the United States. We produced that year 200,000,000 bbls. of crude oil from which about 1,000,000,000 gallons of gasoline was manufactured. This billion gallons would have furnished each of the 639,000 automobiles with 1,500 gallons of gasoline per car. It is, therefore, quite obvious that the new industry, making a new kind of gasoline from natural gas, faced serious handicaps. Not only was there plenty of gasoline without this new kind but there were no generally accepted standard specifications. The product was wild and considered very dangerous to handle. There was little or no uniformity of quality and a strong general prejudice against it from most all directions. In the struggle to build a new industry, there is usually little cooperation. Each follows his own individual ideas as to plant equipment and plant operation; hence the product itself is nearly always the last thing to be standardized, and it was not until 1921 that the industry reached the stage of development where it was felt that sufficient cooperation could be obtained among the manufacturers to make successful a general move toward standardization of specifications.

In April of that year quite a large number of manufacturers met in Tulsa and organized the Association of Natural Gasoline Manufacturers. Standardization of product received their first and most earnest consideration and their efforts have brought very beneficial results, not only to the natural gasoline industry, but to the entire petroleum industry, as well. Today when you order a car of any of the five grades of natural gasoline, you know just what you are ordering and what you are going to get. The industry has very definitely passed the experimental stage and is now in "quantity production."

Used More Extensively

The main characteristic of natural gasoline, as you probably know, is a gravity, considerably higher, consequently a lighter and more volatile gasoline than that recovered from crude oil in refinery practice. It also has a range of boiling points much lower than gasoline obtained from crude, which means that it vaporizes at a lower temperature.

From year to year the increasing demand for gasoline and the necessity for refiners improving their methods in order to increase the yield thereof and at the same time reduce their unit costs, has made it necessary for them to cut deeper into the crude and extract as nearly as possible all the commercial gasoline contained therein. The development of cracking processes, whereby the molecular construction of the residuum from the distillation of crude oil is broken up and a greater percentage of gasoline obtained, has aided greatly in this direction, but in no less degree has the increasing production of natural gasoline assisted, because in cutting deeper into the crude the gravity of the gasoline produced is heavier and it is not sufficiently volatile to provide the most efficient carburetion in motor use. In the vernacular of the gasoline man, it would be said that the initial boiling point is too high and the chain of boiling points is too irregular to produce quick continuous and complete combustion. Natural gasoline with its lighter gravity and lower boiling point range is, therefore, introduced in percentages, ranging from 8 to 15, and the refinery product lightened to the extent that its performance is satisfactory and the maximum efficiency is realized.

Improves Quality

Not so long ago, due to a prejudice founded upon misinformation and lack of knowledge as to proper methods of handling, the public believed the addition of natural gasoline to motor fuel impaired its efficiency and made of the refinery gasoline an inferior product. During the past five years, many of the large companies have led the way in proving by practical tests that the addition of natural gasoline in the proper percentage, not only enable the refiner to secure a greater yield from the crude, but improves the quality of his product in that quicker starting, more uniform acceleration and a higher percentage of the potential brake horsepower is developed. Some of the large gasoline distributors in the East go so far as to make the claim it is possible to develop 15 per cent more power from motor fuel containing the proper percentage of natural gasoline. Too much is as bad as too little—used like kindling in starting a fire. This is because the fuel is more evenly balanced and produces a more uniform, consequently a more powerful combustion. At this time, practically all refiners, unless they are fortunate enough to have a supply of fresh, high gravity crude, are using natural gasoline in some proportion, and the public is slowly but surely coming to the realization that due to the cracking processes, and other methods, to which the refiners have had to resort in order to meet the ever increasing demand, it is absolutely necessary that the gasoline contain the proper percentage of natural gasoline, if they are to have quick starting and uniform acceleration, especially in cold weather. The use of natural gasoline has long since passed the experimental stage and it is now considered a basic product, absolutely necessary in the manufacture of good motor gasoline.

Due to Natural Gasoline

The annual report of the Bureau of Mines, comparing the quality of gasoline supplied to the trade in 1923 as against 1912, calls specific attention to the improvement in the gasoline in 1923, because of the lower initial boiling point, which indicates better starting qualities and because of the larger percentage vaporizing at low temperatures, which indicates more uniform acceleration.

This improvement was brought about solely through the more general use of natural gasoline. If there were no such thing as natural gasoline today I do not believe the gravity of the average gallon of motor gasoline would be over 54 or 55, the initial boiling point would be high and you would have a distillation curve that would look like a dog's hind leg. It would be mighty unsatisfactory motor fuel.

If the crude oil which is being run through our refineries today could have been refined 5,000 or 5,000,000 years ago, whenever it was made, it no doubt would have yielded the ideal gasoline, because the Great Creator does all things well, but during the time it has been stored in the earth, while we have been trying to find out what it was good for and then how to find it and then get it, a large percentage of the lighter and more volatile gasoline fractions have evaporated from it and have been picked up by gas with which it has come in contact.

Monkey Gland of Petroleum

There is no natural force of nature present in oil or gas sands which will cause the light gasoline to precipitate out of the gas and back to the crude oil. The service the natural gasoline industry renders is to recover this gasoline and put it back where the Great Creator intended it should be. This is essentially an era of conservation and the function of the natural gasoline industry is truly laudable in that respect. Natural gasoline is to motor fuel as the absinthe in the cocktail and the gin in gin-rickey, the monkey gland of petroleum.

In 1923, had it not been for the production of approximately 900,000,000 gallons of natural gasoline, the stocks of gasoline would have been practically exhausted last year.

Only a short while ago the usual refinery practice in making Navy gasoline was to cut for 58-60 gravity, which from most crude oils yielded a product with an initial of 115 to 120, with an end point of 415 to 420, sometimes as low as 400. Today the refiner is cutting for 437 end point which generally yields, except from very high gravity, fresh crude, a 52

35 gravity, 140 to 160 initial boiling point 437 end point and then to this must be added the production of the cracking stills, which in probably the average case reduces the general gravity and raises the initial boiling point and knocks the distillation curve into that dog's leg I spoke about.

It is only by the addition of natural gasoline in the proper percentage that the gasoline produced in the average refinery today can be balanced as to initial boiling point, intermediate boiling points, such as the percentage at 221 and up to 350, as well as gravity to make it a satisfactory motor fuel. In some refineries, due either to the grade of crude run or the process employed, the gasoline is all right except for the very low gravity, while in others the gravity is high enough but the initial is too high and the percentages, boiling at low temperatures, is too low. In either case natural gasoline is correcting their troubles.

Even with all the improved processes in refinery operation, where everything, including the smell, is extracted, refiners are not and have not been for many, many months making a return on their investment. And because of the ever-increasing demand for gasoline, as well as the economic necessity for the highest possible efficiency in operation, you need never expect a return of the day when you ordered Navy gasoline and received 60 gravity, 110 initial boiling point, 390 end point straight run gasoline. The day of the old time socalled straight run gasoline is gone forever. In fact it was gone long before some of you took down those "strictly straight run" signs at your filling stations and long before you quit telling your customers your gasoline was better because it had no "casinghead" in it.

There are, of course, a few isolated cases where, due to the availability of fresh high gravity crude oil the refiner does not have to use natural gasoline, but that can only be a temporary condition with him. The flowing well of 2,000 bbl. today is the settled 50-bbl. pumper of tomorrow and the lower gravity crudes constitute the backlog of the industry. I have one particular case in mind; this refiner last year was making straight from the crude without the help of natural gasoline a 60 gravity 435 end point gasoline and getting all the gasoline out of the crude too. Today he is barely able to make 58.3 gravity from the crude from the same wells and his initial boiling point is a few points higher every month. By next summer he expects to be using natural gasoline.

Through misinformation the motoring public formed the opinion some years ago that natural gasoline, then called "casinghead," made a very inferior grade of gasoline out of even the best refinery product. The natural gasoline industry accepts a part of the responsibility for this because of the wild product that was being put on the market then and the fact that they manufactured, but at the request of the jobbers, if you please, a kerosene blend which went on the market in competition with good gasoline at time when the jobbers' margin on good gasoline was practically nil.

Must Reeducate Trade

There would have been money in the kerosene blend business for both the jobber and the natural gasoline manufacturer if the stuff could have been made to run a car. But it wouldn't. We should have known it would not be satisfactory, but we followed the line of least resistance and, gentlemen, we paid and paid dearly for it for two years. At the same time you followed the line of least resistance and knocked all gasoline containing even a trace of natural gasoline and now you are either going to have to keep still about it or reeducate your trade on the value of natural gasoline because you might as well make up your mind that you are using it. And why should you keep silent about it? Why not tell the public the truth? Tell them, of course, your gasoline has the proper percentage of natural gasoline in it, that it wouldn't be good gasoline if it didn't have. Explain to them how refinery processes have changed and how natural gasoline has made it possible to supply the increasing demand for gasoline and at the same time maintain the high quality they demand.

Becoming More Necessary

As the flush high gravity pools are exhausted and when we commence as we must some day, refining the crude oil, which has been in storage for years and from which much of the light gasoline has evaporated, the use of natural gasoline will be even more necessary than today.

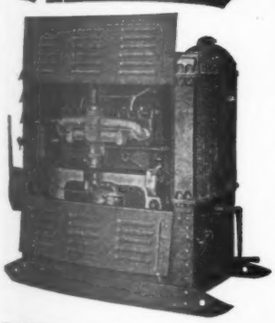
As evidence of the fact that natural gasoline is an absolute necessity, we have the movement by practically all the major producing and refining companies of the world installing gasoline plants on their own producing properties and buying additional gas from adoining properties whereas a very few years ago they were glad to sell their gas to anyone who had the nerve to build a gasoline plant.

The addition of natural gasoline in proper proportion to the product of the refinery is no subterfuge and does not constitute the substitution of something we are trying to fool you into believing is just as good. It is only following in the natural course of events in an era when science is making probably the most radical changes of all times in all lines of industrial endeavor and why should not the oil business be doing a few things thought impossible or wrong a few years ago. In the light of the improvements in manufacture and utilization of petroleum products in the past few years we may well expect further improvement and change. We find that condition in almost every other line of industry. The wild unruly and dangerous product of a few years ago is gone. From month to month the tendency in natural gasoline manufacture is toward a product more satisfactory and more easily handled.

EQUIPPED WITH RICARDO CYLINDER HEAD

Right: The Power Take-Off
Below: The Industrial Unit

Waukesha
TRADE MARK



A power unit of the heavy duty type built for speeding up production in the operation of pumps and drilling machinery. Extremely economical in running-cost; thoroughly dependable in power-delivery and long-period performance. The proof is in your problem. Write for complete details.

Waukesha Motor Company
Engine Builders
Waukesha, Wis. New York City

Following the Dissolution of the Partnership of W. O. Ligon Company

William O. Ligon, jr.

Certified Public Accountant
(Oklahoma and Arkansas)

Member of the American Institute of Accountants

Announces the Opening of Offices at
413-417 Exchange National Bank Building
Tulsa, Oklahoma

Tulsa, November 17, 1924—Telephone 8106-8107

A mark of Distinctive Service for over a quarter of a century

The First Requisite for New Financing is, a

Certified Balance Sheet

The banker, the broker, underwriting the securities, and the investing public must have the facts concerning the financial condition of your company. They demand to know that the security and earnings warrant the financing you desire.

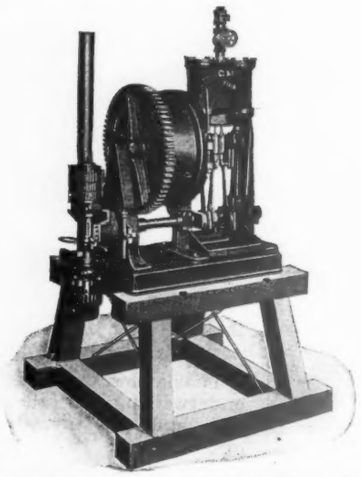
The balance sheet, statement of earnings, and supporting schedules should be prepared by public accountants who have the practical and technical knowledge of the Petroleum Industry, and who are, therefore, fully qualified to prepare these statements in accordance with the demands and requirements of the bankers and brokers.

Our Service to the Petroleum Industry Comprises:—

Balance Sheet and Detailed Audits
Special Investigations
Refinery Cost Systems
Systems for Producing Companies
Preparation requirements for Listing Securities on Stock Exchanges
Advisors in re-organizations, Mergers, Consolidations and New Financing
Preparation of Literature Concerning Public Offering of Securities
Federal and State Income Tax Service

J. H. Greenhalgh & Company
Public Accountants
4403 Sheridan Road, Chicago
16 King St., London

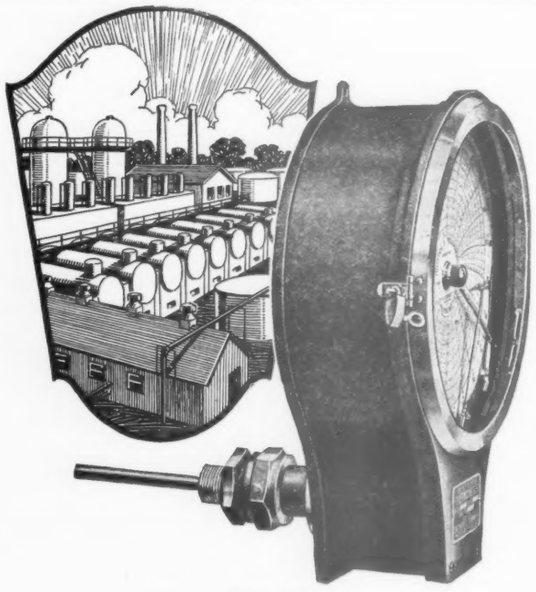
Announcement



A reorganization of this 23-year-old company has just been affected. Our policy is to continue the high standard of manufacture and service which has been the outstanding factor in building this business since M. C. Bullock, the father of the diamond drill, started experimenting back in 1870.

We will be pleased to hear from oil companies interested in diamond drilling.

STANDARD DIAMOND DRILL CO.
First National Bank Bldg., Chicago



Rugged Simplicity—
BRISTOL Instruments
reveal this unfailing character of American Greatness

In its mechanical products, as well as in its men, America places its approval most positively on those that do the work dependably, no matter what adverse conditions may prevail.

Bristol's instruments are world-famed for uniting precision with a ruggedness and simplicity that puts break-downs and maintenance expense right down to the practically irreducible minimum.

Engineers in refinery, field, and pipe line work have learned from plenty of experience that Bristol instruments are the most reliable and sturdy for recording measurements of pressure, temperature, liquid level, motion and electricity.

Full details of Bristol instrument capacity for serving you will be supplied gladly, without obligation, by the Bristol office nearest you.

THE BRISTOL COMPANY, Waterbury, Conn.

Branch Offices:
Boston New York Pittsburgh Detroit Chicago St. Louis San Francisco

BURBANK POOL GASOLINE PRODUCTION PROBLEMS

(Continued from Page 24)

line produced in the Burbank Pool has an overhead of about 3½ cents per gallon which must be added to the royalty, which is 33⅓ per cent and actual operating costs of the plants, before any profit is derived from this big investment. The fact that the average price of gasoline has been about 9 cents for the last two years makes it very apparent, even to the uninitiated, that the gasoline plants in the Burbank Field, on the present price of gasoline, are unprofitable. The field, however, is rich in promise in that it will have a long life and that as the vacuum increases the oil sand will yield its richer vapors under vacuum and consequently hold up gas volumes. It is certain that the plants in the field will be producing as much as 10 years from now, of course,

High-pressure absorbers.

with a diminished production. Any additional acreage which is sold by the Osage Indian Agency later will add more wells and help the gasoline situation that much.

All residue gas from the plants in the field is being utilized through booster station by the gas lessee under Osage rules and regulations. This gas is being used from Tulsa to Kansas City and this very fact adds to the value of this rich oil field. Three lines were laid as much as 30 miles to take care of this residue gas. Through it all the Osage Nation is obtaining a rich and profitable revenue as it collects 1/18 of all gasoline sold and 3 cents for every thousand feet of gas which is utilized commercially.

The writer, as one of the representatives of the gasoline fraternity, thinks the Burbank Field is handled in an ideal manner, that is, everything is being utilized, and during no time in the development of the production of the field was there any product wasted.

RESPECTFUL CONSIDERATION

The readers of The Oil & Gas Journal are of the highest type. They are the real men of the industry.

These men read the advertisements in the Classified Section with respect and consider the merits of every advertisement inserted by their fellow readers.

If your advertisement were in the Classified Section it would receive the same consideration that thousands of men are giving the good advertisements already there.

TENTH MISSION GASSER

OKMULGEE, Okla., Nov. 22—Carder-Sewell and others at No. 2 Boudinot, in the SW cor. SE NW, Section 17-17-16, were completing their well at 1,012 feet, with a showing for a good gas well. At the time the report came in, the well was showing around 3,000,000 feet at only a few feet in sand. They expected to drill about 14 feet into the sand. It offsets a good gas well and is the tenth gasser for the Mission Pool, which adjoins the town of Coweta on the east.

PARKERSBURG MACHINE CO. PARMACO PARKERSBURG W. VA. U.S.A.

THERE IS A DIFFERENCE IN PACKERS

=

PARKERSBURG MACHINE CO.

PARKERSBURG W. VA.

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Texas Pattern
Casing Shoe

Drive Shoes
Casing Shoes
Casing Clamps
Anchor Clamps
Gas Packing Clamps
Rotary Tool Joints
Male & Female Steel Nipples
Shoe Guides

Male & Female
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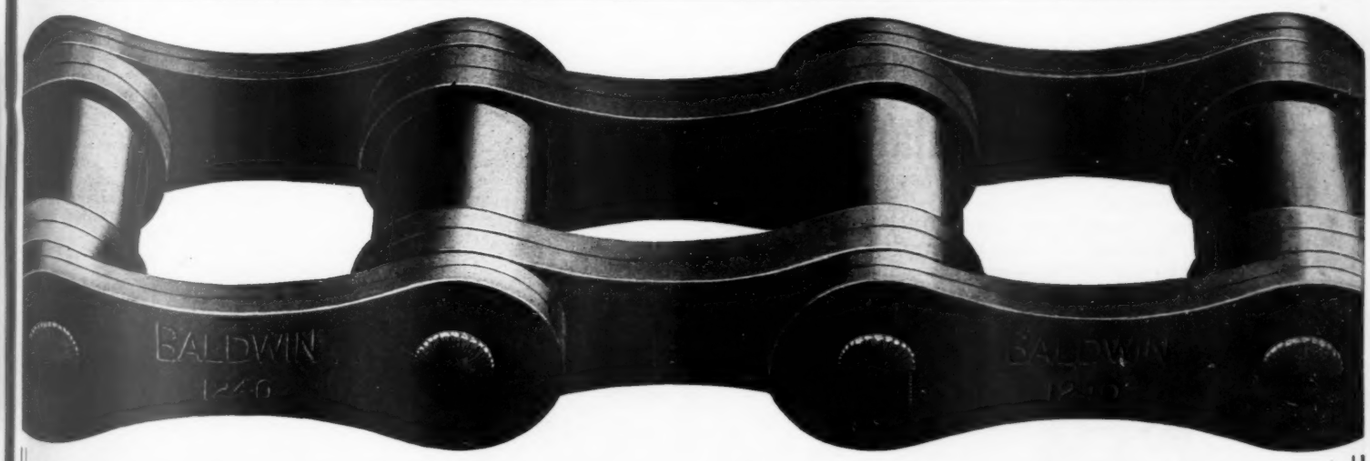
New Catalog just off the press
Write for copy

Gas Packing Clamps With Gas Outlet

BARTLESVILLE SUPPLY CO. OF MO.
3400 Maury Ave., St. Louis, Mo.
Stocks carried by Dealers and Nichols Transfer & Storage Co., Tulsa, Oklahoma for your convenience.

Regular Pattern
Casing Shoe



Baldwin Accurate Oil Field Chains

Straight Side Plates - - eliminate danger of stretching - - results in minimum of repairs and uninterrupted production.

Accurate to the Thousandth of an Inch - - Pins and Bushings **ground** to exact size after being hardened.

"IF THEY ARE WORN ANYWHERE WE CANNOT FIND IT" - - is the unsolicited report of a satisfied driller after having a set of these chains in use continuously night and day for more than 8 months, and using rock bits almost the entire time, on one of the most difficult drilling formations to be found anywhere. **"Previously to drill the same amount of hole we would have used probably nine sets of ordinary type chain,"** is another quotation from his letter.

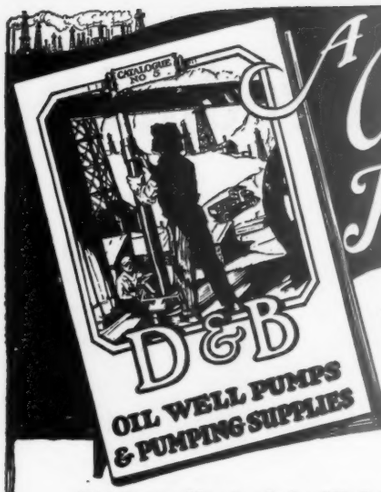
George J. Fix Company, 815 South Ervay St., Dallas, Texas

BALDWIN CHAIN & MFG. COMPANY
Worcester, Mass., U. S. A.
H. V. Greenwood, General Western Sales Representative
Peoples Gas Bldg., Chicago, Ill.
On Sale at Leading Supply Houses

Adam-Hill Company, 96 Ninth St., San Francisco, Cal. 637 South San Pedro St., Los Angeles, Cal.

Boston New York Pittsburgh Branch Offices: Detroit Chicago St. Louis San Francisco

the Mission Pool, which adjoins the town of Coweta on the east.



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You will find that this new book, just off the press, and copyrighted, contains valuable knowledge in such form as to be easily remembered.

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AMERICAN PETROLEUM INSTITUTE PROGRAM FOR FORT WORTH SESSION

The preliminary program for the fifth annual meeting of the American Petroleum Institute, just announced, while distinguished by prominent speakers to be heard at the general sessions, puts more than usual emphasis on the technical phases of the industry as represented for discussion in group sessions. The meeting will be held at the Texas Hotel, Fort Worth, December 9, 10 and 11.

Speakers thus far announced for the general sessions include Thomas A. O'Donnell, president of the Institute; Charles E. Mitchell, president, of the National City Bank of New York; Amos L. Beaty, president, The Texas Co.; Bruce Barton; E. De Golyer, of the Amerada Petroleum Corp.; D. M. Folsom, of the General Petroleum Corp., and H. L. Horning, general manager of the Waukesha Motor Co. Speakers for the final general session have not yet been announced. It is anticipated that Judge Beaty, with the subject "The People, the Government and the Oil Industry," will give one of the keynote addresses of the meeting.

All of the institute's special committees on standardization will render reports at group sessions covering each subject, and the board of directors of the institute will probably act on several which have reached the stage of completion. There will be a group meeting on problems in connection with the storage and transportation of petroleum and its products. A very complete program has been worked out for group meetings on problems of oil taxation and accounting, arranged, as in the case of all group sessions, for general discussion as well as for presentation of formal papers. A group meeting on the general topic of improvement of oil drilling and production methods and equipment will be held, as well as group meetings on heating the home with oil and transportation of oil by railroads. There will also be a group session on the topic of motor fuel and motor lubrication, at which the report of the Bureau of Standards on its joint motor fuel research investigation will be made. Instead of the formal dinner that has been a feature of the previous institute meetings, the program winds up with a barbecue dinner and rodeo.

The program as it stands to date follows:

Tuesday, December 9, 1924

Morning, 10:30 o'clock—Meeting Board of Councillors. (To nominate candidates for election as members of the Board of Directors.)

Afternoon, 2:30 o'clock—General session: The President's Address, Thomas A. O'Donnell. Subject to be announced, Charles E. Mitchell, president, National City Bank of New York.

Evening, 8 o'clock—General session: Report of Board of Councillors and election of directors. "The People, the Government, and the Oil Industry," Amos L. Beaty, The Texas Co. "Real Friends of the People," Bruce Barton, Barton, Durstine & Osborn

Wednesday, December 10, 1924

Important note—The only general session on this day will be in the evening at 8 o'clock. The entire day will be devoted to group sessions, at which various subjects given below will first be treated in a prepared address by a selected speaker. After each speech, the meeting will be thrown open for general discussion and consideration of the subject.

Morning, 10:30 o'clock—Meeting Board of Directors. 10 o'clock, group meetings: Group 1—General Topic, Standardization of Oil Field Equipment. "Standard Specifications for Steel and Iron Pipe for Oil Country Tubular Goods." Committee report, J. Edgar Pew, national chairman. "Dimensional Standards of Cable Drilling Tool Joints." Committee report, J. T. Kirby, national chairman. "Standardization of Belting," committee report, William Warr, National vice-chairman. "Standardization of Oil Field Boilers," committee report: A. B. Steen, national chairman.

Group 2—General topic: Problems in Connection with the Storage and Transportation of Petroleum and Its Products. "Reducing the Losses from Natural Gas Gasoline," D. E. Buchanan, president, Association of Natural Gasoline Manufacturers. "Report of Investigations on Methods of Determining the Vapor Pressure of Gasoline for Transportation Classification," H. L. Shoemaker, Standard Oil Co. of New Jersey. Round table discussion of an abridged table for reducing the volume of petroleum products to a 60 degree F. temperature base. Round table discussion on lightning protection; preliminary statement by Ralph J. Reed, Union Oil Co., of California.

Group 3—General topic: Problems of Oil Taxation and Accounting: "The Value of Standardization of Cost Accounting"; (Ppenger to be announced.) "Problems of a General Auditor;" (speaker to be announced.)

Afternoon—2 o'clock. Group meetings: Group 1—General topic: Improvement of Oil Drilling and Production Methods and Equipment; "Pumping Deep Wells in California," John Zublin, General Petroleum Corp.; "Deep Drilling," H. C. Cooper, Hope Natural Gas Co. "Cementing Deep Wells," Frank F. Hill, Union Oil Co. of California. "Dressing and Tempering Bit Steel in Oil Fields," Francis B. Foley, consulting engineer, United States Bureau of Mines.

Group 2—General topic: Heating the Home With Oil; "The Place of Furnace Oil in the Petroleum Industry," O. P. Keeney, president, National Petroleum Association. "The Problem of the Oil Burner Manufacturer," Edward P. Bailey, National Airoil Burner Co. "Why the Domestic Oil Burner is a Household Fixture," Wallace Capen, Home Appliance Corp. "Comparative Values of Fuel for Domestic Heating." (Speaker to be announced.)

Group 3—General topic: Problems of Oil Taxation and Accounting. Round table discussion of following subjects: "Cost Accounting in Oil Refining and Sales;" "Cost Accounting in Oil Production;" "Cost Accounting in Cooperage and Other Minor Activities;" "Cost Accounting — Transportation of Oil;" "Problems in Materials Transferred from Warehouses and Fields;" "Depletion—Depreciation and Reserves."

Group 4 — General topic: Transportation of Oil by Railroads; Open meeting, general committee on railroad transportation. General discussion railroad transportation problems.

Evening—8 o'clock. General session—"The Geologist and the Petroleum Industry," E. DeGolyer, Amerada Petroleum Corp; "California'" D. M. Folsom, General Petroleum Corp. "The Gasoline Demand of the Future," H. L. Horning, Waukesha Motor Co.

Thursday, December 11, 1924

Morning—Important note: The morning on this day will be devoted to group sessions, at which various subjects given below will first be treated in a prepared address by a selected speaker. After each speech, the meeting will be thrown open for general discussion and consideration of the subject.

10 o'clock—Group meetings. Group 1—General topic, Problems of Oil Taxation and Accounting. "Valuations of Oil Properties for All Purposes," J. L. Durnell; "Income Tax Problems in the Oil Industry," J. J. Cosgrove; "Invested Capital—Realized Appreciation," F. R. Angevine.

Group 2—General topic: Standardization of Oil Field Equipment. "Standardization of Rotary Drilling Equipment," committee report, J. F. Lucey, national chairman. "Standardization of Rig Irons," committee report, H. J. Lockhart, national chairman. "Standardization of Standard Rigs and Derricks," committee report, W. W. Fondren, national chairman, "Standardization of Wire Rope and Manila Cordage," committee report, C. C. Scharpenberg, national chairman.

Group 3—General topic: Motor Fue

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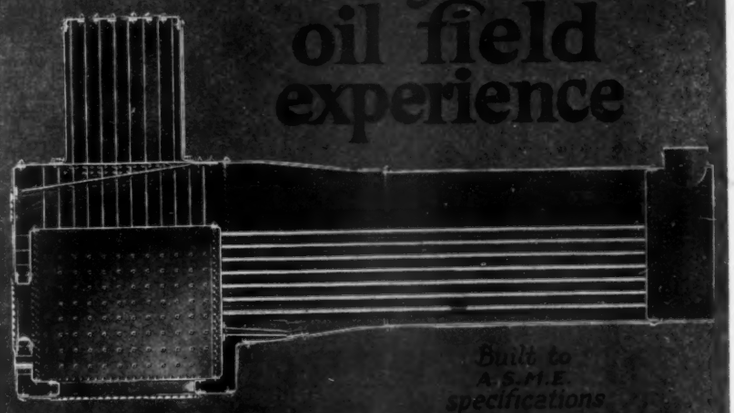

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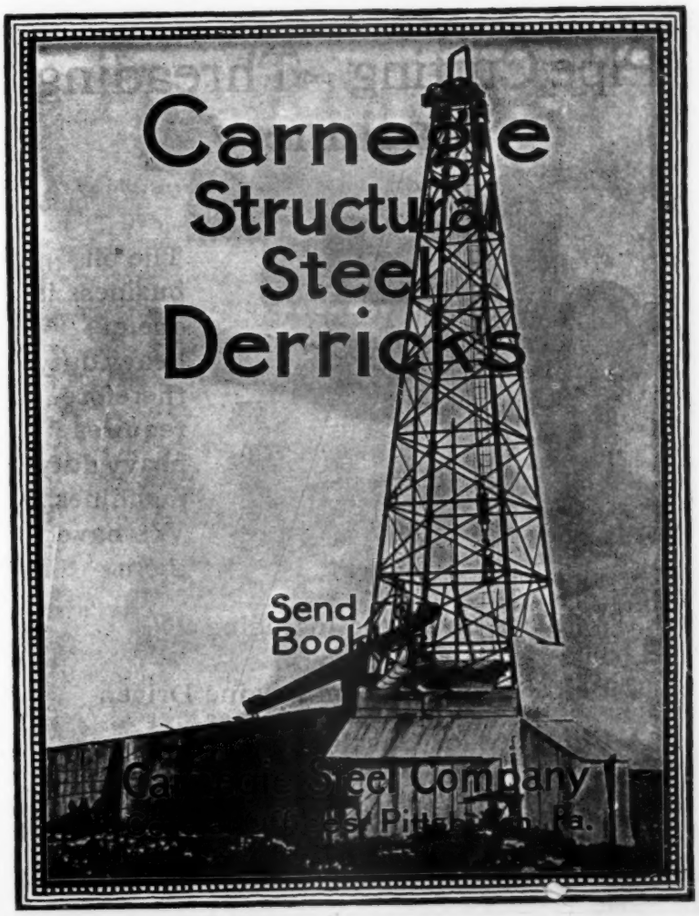

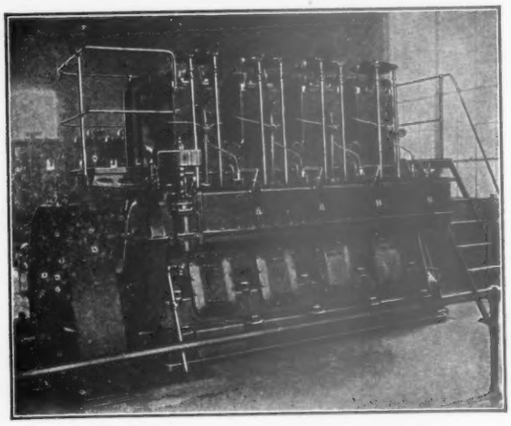

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and Motor Lubrication. "Report on Motor Fuel Investigation," H. K. Griffin, United States Bureau of Standards. "Lubrication of the Automobile Engine," (Speaker to be announced;) "Utilization of Motor Fuel from the Standpoint of the Automotive Engineer." (Speaker to be announced.)

12 m.—Meeting Board of Directors (luncheon). Election of officers, etc.

Afternoon, 2:30 o'clock—General session. (The program and speakers for this general session will be announced later.)

Evening, 5:30 a'clock—Barbecue Dinner.

8:30 o'clock, Rodeo.

COASTAL PRODUCTION FOR OCTOBER, 1924

HOUSTON, Tex., Nov. 22.—The estimated gross production of the Coastal pools and the Southwest fields during the month of October is placed at 3,804,220 bbls., an increase of 148,420 bbls. compared with September. The Coastal region increased 190,328 bbls. and the Southwest fields fell off 41,908 bbls.

The gross for the Coastal territory is placed at 2,671,208 bbls. from 2,768 wells, as compared with 2,480,880 bbls. during September from 2,656 wells. A pipe line into the Big Creek district in Fort Bend County permitted opening of wells there and an increase of 57,640 bbls. resulted. A good well on the east side of the Smith tract in the Goose Creek Pool and other completions in the older part of the district caused an increase of 59,633 bbls. in the gross output there. The West Columbia Pool increased 40,160 bbls., resulting from 9 wells on the north side and the reviving of old producers. In the Vinton, La., pool, a new deep sand well increased the gross output 54,399 bbls. over the September estimate. The old districts responded with increases, following the working over of old wells. On the other hand, Hull fell off 25,530 bbls. and Humble 18,815 bbls. from the gross output credited for September. The Orange Pool likewise declined 15,330 bbls. The well of the Vacuum Oil Co. at Lockport, Calcasieu Parish, is credited with 53,599 bbls. gross for October.

Southwest Fields

The Southwest division is credited with a total of 1,133,012 bbls. from 1,112 wells. The Luling Field declined 58,420 bbls. from the September estimate and the Laredo districts also fell off 5,849 bbls. Both Calliham and Rockdale-Minerva Fields declined, but the Somerset Field shows an increase.

The Henne, Winch & Fariss well in Jim Hogg County came in late in October and is credited with 4,000 bbls. for that month.

The following table gives the number of wells, estimated daily average and gross production in each district for the month:

October Production

District—	Wells	Av. Daily	Prod.
Batson	364	1,635	50,685
Blue Ridge	19	819	25,389
Barber Hill	14	137	4,247
Big Creek	6	2,500	77,500
Dayton	11	95	2,945
Damon Mound	27	1,305	40,455
Edgerly (Louisiana)	17	491	15,221
Goose Creek	273	12,053	373,643
Humble	310	6,115	189,565
Hull	251	17,340	537,540
Jennings (La.)	52	775	24,025
Markham	30	140	4,340
Orange	260	10,830	335,730
Spindletop	115	1,069	33,139
Pierce Junction	9	294	9,114
Saratoga	274	1,609	49,879
Sour Lake	413	4,446	137,826
Vinton (Louisiana)	111	6,099	189,069
Welsh-Bute (La.)	6	87	2,697
West Columbia	118	16,390	508,090
Lockport (La.)	1	1,729	53,599
Miscellaneous	87	210	6,510
Total October	2,768	86,168	2,671,208
Total September	2,656	82,696	2,480,880
Increases	112	3,472	190,328
Southwest Fields—			
Luling	331	28,680	888,080
Laredo	314	4,139	128,309
Somerset	234	2,583	80,073
Calliham	39	569	17,639
Rock-Minerva	193	481	14,911
Miscellaneous: Jim Hogg County	1	...	4,000
Total October	1,112	36,452	1,133,012
Total September	1,093	38,778	1,174,920
Difference	19	2,326	41,908
Grand total Oct.	3,880	122,620	3,804,220
Grand total Sept.	3,749	121,474	3,655,800
Difference	131	1,146	148,420

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Safety and Gasoline Films to Be Shown In Kansas Fields

Arrangements have been completed for the exhibition of the safety film, "Live and Let Live," in the State of Kansas, by the Petroleum Safety Council of the Mid-Continent Oil and Gas Association, in accordance with the itinerary shown below. In addition to the safety film, there will be shown "The Story of Gasoline," produced also under the supervision of the United States Bureau of Mines, which illustrates and explains the process of manufacture of gasoline.

November 28, Coffeyville.—Chairman, H. B. Setzler, National Refining Co.; and B. J. Healy, Sinclair Companies.

November 29, Independence.—Chairman, James A. Carroll, Prairie Oil & Gas Co.

December 1, Neodesha.—Chairman, J. M. Steffen, Standard Oil Co. of Kansas; and M. R. Smith, Prairie Pipe Line Co.

December 2, Chanute.—Chairman, W. V. Fitzpatrick, Prairie Pipe Line Co.; Floyd Reinhard, Peerless Refining Co.; and C. R. Larrick, Secretary Chamber of Commerce.

December 3, Humboldt.—Chairman, Joseph Kirschner, Sinclair Pipe Line Co.; and William Murphy, Prairie Pipe Line Co.

December 4, Garnett.—Chairman, Homer C. Cooper, Cooper & Denton; and J. W. Atkins, Black, Sivalls & Bryson.

December 5, Paola.—Chairman, D. R. Kinkead, Prairie Pipe Line Co.

December 6, Kansas City, Kans.—Chairman, G. Bebbington, Sinclair Refining Co.; and Frank E. Wellman, Kansas City Refining Co.

December 8, Eureka.—Chairman, Rolla B. Stebbins, Secretary-Manager Chamber of Commerce; J. F. Poland, National Supply Co.; and John Williams, Black, Sivalls & Bryson.

December 9, Hamilton.—Chairman, John H. Francis, Mid-Kansas Oil & Gas Co.; and O. M. Lewis, White Eagle Oil & Refining Co.

December 10, Virgil.—Chairman, Harry M. George, Cosden Oil & Gas Co.; Paul C. Mann, Continental Supply Co.; and C. C. Riley, Prairie Pipe Line Co.

December 11, Madison.—Chairman, J. P. Wolfe, Empire Companies; Clyde Bogart, Carter Oil Co.; and Max Woodward, Black, Sivalls & Bryson.

December 12, Florence.—Chairman, C. V. Hale, Orlando Petroleum Co.; J. L. Brown, Amerada Petroleum Corp.; and C. E. Leslie, Prairie Oil & Gas Co.

December 13, El Dorado.—Chairman, G. W. Scott, Skelly Oil Co.; F. P. Graham, Carter Oil Co.; J. S. Hayes, Gypsy Oil Co.; and F. A. Helling, El Dorado Refining Co.

December 15, Augusta.—Chairman, M. R. McCamon, White Eagle Oil & Refining Co.; A. E. Alexander, Mid-Kansas Oil & Gas Co.; D. W. Williams, Empire Companies; and A. T. Watson, Prairie Oil & Gas Co.

December 16, Wichita.—Chairman, W. E. Perdew, Derby Oil & Refining Co.; C. L. Henderson, Vickers Petroleum Co.; and Mr. Rankin, care T. C. Johnson.

December 17, Arkansas City.—Chairman, R. H. Waser, Roxana Petroleum Corp.; G. N. Moore, Moore Refining Co.; and W. H. Yingling, Empire Gasoline Co.

December 18, Winfield.—Chairman M. W. Baden, Trees Oil Co.

SUPPLY STORES AT WINFIELD

WINFIELD, Kans., Nov. 22.—Many new lumber and oil well supply firms are establishing stores at Winfield to supply the rapidly increasing demand for drilling materials. The Bradford Rig & Reel Co. of Tulsa, has purchased a site here on which a branch house will be erected, and two new lumber yards are being installed. Two rig building firms have also established branches.

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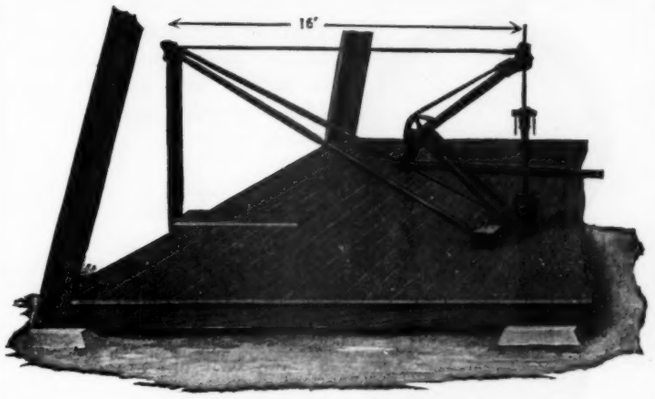

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Paraguayan Oil Find Reopens Controversy With the Bolivians

A French engineer, examining oil deposits in Paraguay, has written to a Buenos Aires paper, giving it as his opinion that the world's greatest petroleum field is situated in the Paraguayan Chaco. He says the Chaco output will soon astonish all beholders.

Mining engineers are incurable optimists, says the Wall Street Journal, but it is a sober fact that Standard Oil of New Jersey is boring five wells in the Bolivian Chaco, and has found oil. There is not the least doubt of the existence of oil in the Paraguayan Chaco.

North of the Pilcomayo River the Gran Chaco extends for 100,000 square miles, and the whole of it is claimed by both Bolivia and Paraguay. It is uninhabited and uncultivated. Both Paraguay and Bolivia have granted concessions, against which corresponding protests have been made.

It has been generally accepted as probable that this territory will be divided equally between the claimants, by a diagonal line from northeast to southwest; but this is the merest guesswork. Such division has not been accepted by the parties interested, and both have occupied stations—not worthy to be called parts—on the Paraguay River well outside of the frontier shown on maps.

This controversy dates back to Colonial times, and has not been audibly acrimonious, simply because the Chaco has been estimated as of little value and frequently flooded. Living conditions are almost unbearable. This has kept Paraguayans out. Bolivian political and industry interests are centered in the high plateau, where tin, copper and silver are found, and in the northern rubber districts. Only Santa Cruz de la Sierra, a much neglected, but rich, tropical agricultural district on the northern fringe of the Chaco, is interested in that region.

But Santa Cruz is to have railways to the Argentine frontier and to La Paz. The discovery of oil is an established fact. Failure to settle the boundary will soon constitute an international question far more serious than that of Tacna and Africa. Are not the petroleum interests of the world sufficiently powerful to effect an agreement between these two republics? Money need be no object if reports are to be believed. But to wait until they have been proven to the hilt might come expensive, even for the oil interests.

CONCEPTIONS OF FLUID DELIVERY EXPLAINED

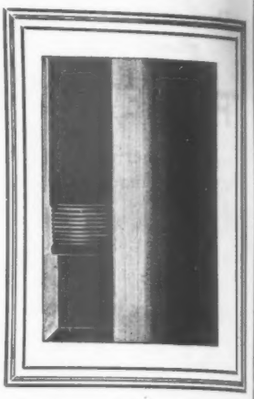
(Continued from Page 32)

different orifice furnishes a different mathematical reservoir. Physically, the orifice may be the same hole or holes, but each position of a valve or other alterable device presents a new mathematical reservoir. When there is more than one hole, the alteration in one forces a new reservoir upon all the others. The mathematical reservoir may have its life reckoned from any instant during the time when the orifice is open. It makes no difference mathematically how long a time, before this zero point of reckoning, the reservoir has been in delivery. The economic difference may be great; but that is another matter.

Pressure, volume, velocity, and time are the cardinal functions of a mathematical reservoir. All other functions exist by virtue of these.

39. The mathematical reservoir determined by the potential pressure, potential volume, potential velocity and potential life is the potential reservoir. Such a reservoir may be either infinite or finite in size, mathematically speaking.

There are no restrictions as to the nature of the fluid contained; it may be oil, water, or gas (liquids and gases of any kind, in fact) either singly or in com-



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One-half of the Norris Clutch attaches to the working valve in place of the ordinary valve bottom; the other half screws into the crown of the standing valve. These parts do not interfere in any way with the normal operation of the valves—you simply forget all about them until you want to pull the standing valve.

When this becomes necessary, you merely lower the rods and give them a few turns to engage the clutch parts of the Norris Valve Puller. The lower valve comes up with the Rods the first time and every time. A complete run, in and out, is saved.

Saves Time and Money

Thus the Norris Clutch Type Valve Puller saves a run of the rods every time a valve is pulled. And when the cost of running the rods is considered, it is readily seen that the clutch actually pays for itself every time it is used. In addition to this pulling service, the Norris has a large, solid valve bumping space which alone would make it a profitable investment.

If you purchase a Norris Clutch Type Valve Puller you pay for it once and only once, but, if you try to get along without it, you pay for it in labor charges and wasted time every time you pull a valve.

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bination. When in combination, all fluids which make up the combination are in the reservoir. We can not draw a line around one of them and say that it constitutes the reservoir whereas the other are out of the reservoir. In economics this is possible, but not in mathematical analysis.

Neither are there any restrictions on the nature of the orifice which the potential reservoir possesses. The orifice may consist of one hole in any condition except entirely closed; or it may consist of many holes, relatively close to or relatively far from one another. It the latter case we shall speak of the "multiple orifice." As a unit, the mathematics of the one do not differ from the other.

Scope of Primary Functions of Delivery

40. There is nothing imaginary about the potential reservoir and the primary functions of delivery which define it. All is real and exact, so far as we are able to judge natural phenomena after having agreed upon certain fundamental postulates. Of course, these postulates may not be properly conceived by us. It is not the purpose of this analysis to go into that subject. We shall accept the Euclidean geometry and Newtonian principles and work our problem. If it ever becomes necessary or advisable to change the calculations in accordance with recent discoveries, the new ideas will be readily accepted. In the meantime, engineering science can stride along with the old principles.

41. By determining the mathematical relations between the various primary functions of delivery, certain equations are derived which, when plotted upon paper scaled for the purpose, furnish us with the so-called "decline curves." We shall extend the scope of utility for these curves. Problems in economics may not require all possible curves to be constructed for oil and gas reservoirs. The question as to which ones are economically necessary is left to the individual engineer. A complete mathematical analysis does, however, include all of them.

With the data obtained by careful observation in the field, calculations can be easily made upon a revised present performance under varied assumed conditions by the use of the equations and curves. With the latter, the process of calculation is always one of simple arithmetic.

Like calculations can be made upon past or future performance, under actual or under assumed conditions. The assumed conditions refer to contemplated changes in the conditions of production—the pressure against which production takes place is to be decreased or increased at some given instant during the life of the reservoir.

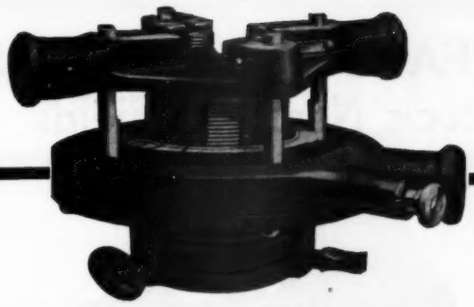
42. Having once established the primary functions of delivery for each control separately, the problem of the secondary functions may then be taken up. This by no means would infer that the latter are secondary in importance, for who will claim that the hen is more important than the egg? These functions are secondary in that they are derived mathematically from the primary ones.

Secondary Functions of Fluid Delivery

43. Due to the laws of physics and mathematics, there are numerous "events" happening within the body of a reservoir. These differ widely according to the nature of the reservoir. (Article 1). All these are grouped as the secondary functions of fluid delivery and their study includes consideration of the following:

(a) The behavior of all pressures other than the potential pressure.
(b) The pressure gradient.
(c) Radial flow toward the orifice.
(d) The drain radius.
(e) Movement of the "contact" between two fluids; e. g., the oil-gas contact and the oil-water contact.
(f) Causes and effects of "oscillation" from one control to another.
(g) The effects of "manipulating the orifice."
(h) The effects of "interception"; i. e., the effects produced by the overlapping or interference of two or more (mathematical) reservoirs.

(Continued on Page 132)



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THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio
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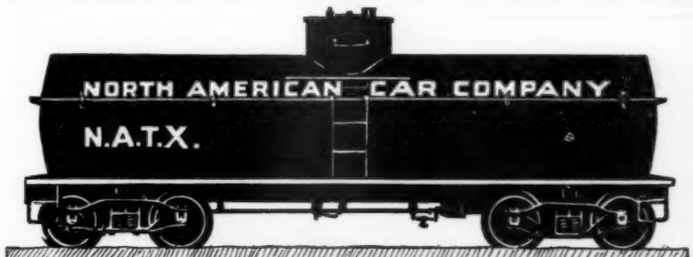

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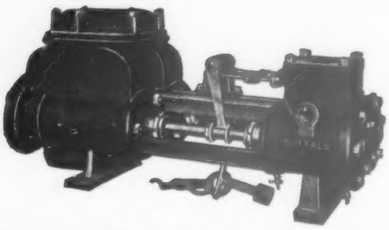
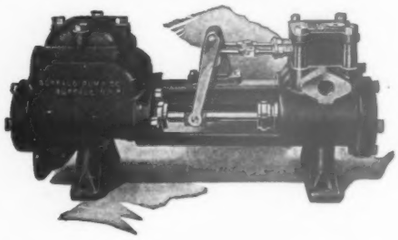


Brass lined water cylinders; bronze disc valves; steel or bronze rods and valve gear are used.



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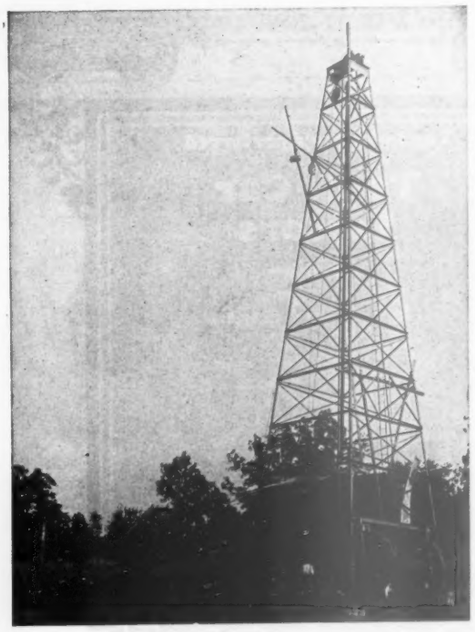

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O'Brien derricks sold for continual use.

O'Brien Steel Construction Company

Washington, Penna.

Rig Equipment Company, Sand Springs, Okla.

Mexican Shipments More Than September, Less Than Year Ago

By George Blardone

TAMPICO, Mex., Nov. 22.—Shipments of petroleum from Mexican ports of primary clearance during the month of October totaled 9,681,763 bbls., a decrease from the movement in October, 1923, of 1,911,952 bbls.; but it is an increase over the September movement of say a half million barrels. Of the movement last month Tampico dispatched 8,516,638 bbls.; Port Lobos, 543,881, while Tuxpam cleared 621,244 bbls. Of the oils cleared crudes were represented by 5,256,109 bbls.; topped crude, 3,424,887; distillates, 438,815, while some 561,952 bbls. of bunker oils is added to balance.

The heavier oils of the northern fields in the above totals aggregate 4,772,695 bbls., of which Ebano crude, for the first time in the history of the discovery field in Mexico totals 213,719 bbls.

The movement in detail follows:

FROM TAMPICO

By Huasteca Petroleum Co.

(Mexican Petroleum)

Oct.	Rig	Vessel, Destination—	Bbls.
2	Ss.	P. H. Harwood, New York.	*63,893
3	Ss.	Meline, New Orleans.....	*49,911
3	Ss.	J. O. Boyd, New Orleans...	†18,356
4	Ss.	Mexoil, Miami	*14,800
4	Ss.	Invergoil, Southampton ...	*59,612
6	Ss.	E. L. Doheny III, Montevideo & B. A.	*75,237
7	Ss.	Fueloil, Miami	*14,089
7	Ss.	G. W. Barnes, New Orleans	*66,412
8	Ss.	Nora, New York	*82,576
8	Ss.	Mendocino, Providence ...	*65,552
8	Ss.	C. Anderson, New Orleans.	†64,357
9	Ss.	C. A. Canfield, New York..	*58,810
10	Ss.	Fred. Ewing, Galveston ...	*62,524
10	Ss.	Mantilla, Portland	*52,918
10	Ss.	Montana, Galveston	*52,353
11	Ss.	F. R. Kellogg, Boston	*63,472
12	Ss.	Dean Emery, New Orleans.	†61,774
12	Ss.	O. D. Bennett, New Orleans	†52,655
12	Ss.	Panoil, Miami	*14,103
13	Ss.	H. G. Wylie, Fall River ...	*37,727
15	Ss.	Scottirh Maiden, Rotterdam	42,672
15	Ss.	W. L. Steed, New Orleans.	†60,537
16	Ss.	S. M. Spalding, New York.	*65,579
16	Ss.	Harold Walker, Philadelphia	63,399
17	Ss.	J. O. Boyd, New Orleans..	†18,271
18	Ss.	I. C. White, Montevideo & B. Aires	*59,242
18	Ss.	G. G. Henry, Providence..	*59,601
19	Ss.	Invergordon, Southampton.	*57,522
19	Ss.	Wm. Green, Galveston	*51,139
20	Ss.	E. L. Doheny, Jr., Rio Janeiro	*72,581
20	Ss.	Fred. Ewing, Galveston ...	*49,778
21	Ss.	F. K. Lane, New York ...	*62,979
24	Ss.	J. M. Danziger, New York	*66,806
25	Ss.	Dean Emery, Panama	*70,274
25	Ss.	Cerro Azul, New York	*74,126
25	Ss.	Mexoil, Tampa	*14,729
26	Ss.	Derbyline, Baltimore	42,769
26	Ss.	C. E. Harwood, Baltimore.	†35,089
27	Ss.	Fueloil, Miami	*14,251
27	Ss.	Cerro Ebano, New York...	*79,201
27	Ss.	Wm. Green, New Orleans..	64,306
27	Ss.	P. H. Harwood, New York	*66,669
28	Ss.	E. L. Doheny, Boston ...	*58,393
29	Ss.	G. W. Barnes, Boston	*61,429
29	Ss.	Fred. Ewing, Galveston ...	*50,383
		Bunker deliveries	190,629
		Total	2,573,585

By Transcontinental Petroleum Co.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Pioneer, Antilla	31,670
2	Ss.	Sucrosa, New York	25,146
4	Ss.	Swiftarrow, Baton Rouge..	32,976
5	Ss.	Hampton Roads, Baton Rouge	36,598
5	Ss.	Somerset, Jacksonville	31,533
6	Ss.	Camden, Baytown	39,864
6	Ss.	Muskogee, New York	37,097
7	Ss.	Aztec, Charleston	31,071
8	Ss.	F-Sulphur 6, New York	31,434
8	Ss.	Dillwyn, Baltimore	37,459
9	Ss.	Dora, Texas City	35,737
12	Ss.	Olna, Baltimore	45,787
12	Ss.	Princeton, Mariel, Cuba ..	44,156
13	Ss.	Niobe, New York	50,649
13	Ss.	L. J. Drake, Jacksonville..	44,536
16	Ss.	Baton Rouge, Key West ..	43,589
16	Ss.	Trontolite, New York	42,214
17	Ss.	Dora, Texas City	37,625
17	Ss.	Pioneer, Santiago y Cienfuegos	41,423
18	Ss.	Agwiworld, Baltimore	44,121
19	Ss.	Madrono, Cienfuegos	42,163
21	Ss.	Hugoton, Baltimore	44,603
21	Ss.	Ardmore, New York	45,097
22	Ss.	M. F. Elliott, New York ..	37,011
24	Ss.	Baytown, Baytown	22,413
25	Ss.	Sucrosa, Bayton	37,634
26	Ss.	Camden, Baytown	47,418
26	Ss.	Princeton, Tampa	42,851
26	Ss.	B. A. Bostwick, Montreal.	44,917
27	Ss.	Somerset, Mantanzas y Preston	42,226
27	Ss.	Hampton Roads, Baltimore	39,731
27	Ss.	May Luckenbach, Texas City	43,051
29	Ss.	J. A. Moffett, Willemstad.	*60,049
30	Ss.	Imlay, New York	49,223
30	Ss.	Baldhill, Baltimore	41,251
31	Ss.	Glenpool, Jacksonville	37,222
31	Ss.	Louisiana, Banes y Nuevitas	24,658
		Bunker deliveries	71,866
		Sub-total	1,538,169
		Less redischarged in port	33,018
		Total	1,505,151

By Mexican Eagle Oil Co., Ltd.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	F. Q. Barstow, Panama ...	*50,196
2	Ss.	San Roberto, London	†42,585
6	Ss.	San Tiburcio, London	*32,348

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Over fifty thousand now in use from Pennsylvania to Argentine and from Oklahoma to India wherever oil is produced.

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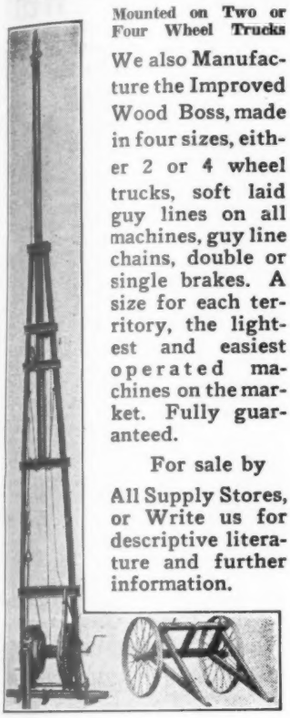

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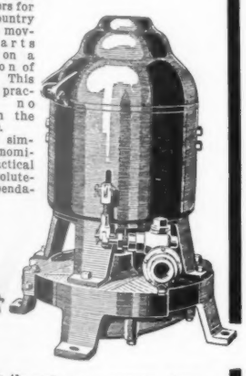

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8	Ss.	Cliona, Venice y Trieste ..	*37,273
9	Ss.	San Fabian, Lizard f/o ..	*55,774
9	Ss.	Mirlo, Land's End f/o	*31,248
9	Ss.	San Ricardo, Las Palmas .	*39,615
10	Ss.	San Gaspar, Portsmouth ..	*61,513
13	Ss.	San Florentino, B. A.-Rio y Montevideo	*72,575
13	Ss.	San Leopoldo, Rio Janeiro	*20,836
13	Ss.	San Leopoldo, Rio Janeiro.	†28,281
13	Ss.	Agwimoon, Marseilles	*35,126
14	Ss.	Absia, New York	*39,775
14	Ss.	San Zeferino, Buenos Aires	*48,945
16	Ss.	San Zotico, Montreal	*44,445
17	Ss.	San Macedonio, Philadelphia	*41,411
17	Ss.	Limicana, Montreal	*35,725
18	Ss.	Akera, Panama	*38,409
19	Ss.	San Quirino, London	†19,577
18	Ss.	San Silvestre, Lizard f/o..	*30,864
18	Ss.	San Silvestre, Lizard f/o..	†19,952
21	Ss.	San Lamberto, Lizboa	*32,853
28	Ss.	San Eduardo, New York ..	*44,619
28	Ss.	Belridge, Houston & New Orleans	†35,973
28	Ss.	Tabora, Rio Janeiro	†27,381
30	Ss.	Cretanula, Land's End f/o	*42,574
31	Ss.	Conia, Naples	*48,800
		Coastwise deliveries	*5,304
		Bunker deliveries	83,988
		Total	1,182,828

By Mexican Sinclair Petroleum Corp.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	W. L. Connelly, New Orls.	30,314
2	Ss.	Farry Farnum, Port Arthur	32,229
3	Ss.	S. L. Fuller, Matanzas.....	69,400
5	Ss.	Madrono, Neuvitas	55,496
7	Ss.	J. F. Farrell, New Orleans	72,505
9	Ss.	A. E. Watts, Havana	71,227
11	Ss.	J. M. Cudahy, New Orleans	69,525
12	Ss.	Gene Crawley, Houston ..	32,836
13	Ss.	Mirita, Tiverton	59,417
15	Ss.	S. L. Fuller, New Orleans.	68,356
16	Ss.	E. V. R. Thayer, Cienfuegos	68,495
18	Ss.	J. F. Farrell, New York..	70,452
18	Ss.	Harry Farnum, Tela, C. A.	32,223
15	Ss.	W. L. Connelly, Pt. Limon-Bocas, C. A.	32,310
23	Ss.	J. M. Cudahy, Havana ...	70,777
25	Ss.	A. E. Watts, New Orleans	69,281
26	Ss.	E. W. Sinclair, New Orlns.	47,692
26	Ss.	Aztec, Fall River	63,136
29	Ss.	Dora, Fall River	48,703
		Bunker deliveries	5,630
		Total	1,060,004

By Cia Mexicana-Holandesa La Corona, S. A.
(Royal Dutch-Shell)

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Chiton, Marseilles	*31,186
1	Ss.	F-Sulphur 1, Freeport	19,253
11	Ss.	Vaarli, New York	42,931
16	Ss.	Meline, Boston	61,636
18	Ss.	Scot. Standard, New Orls.	43,415
19	Ss.	Montana, Philadelphia ...	62,214
19	Ss.	Topila, Boston	45,337
20	Ss.	Halo, Philadelphia	44,611
20	Ss.	Scot. Musician, Houston ..	45,377
24	Ss.	Solana, Philadelphia	46,181
28	Ss.	Belridge (aver.), Houston & New Orleans	32,907
29	Ss.	Scot. American (aver.) Bayonne	63,275
		Bunker deliveries	5,374
		Lighterage: (averaged) Europe, 5,000; U. S. A., 33,614	38,614
		Total	582,311

By Mexican Gulf Oil Co.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Gulftrade, New Orleans...	40,647
2	Ss.	Gulfpoint, Galveston	38,915
4	Ss.	Currier, Port Arthur	31,295
4	Ss.	J. M. Guffey, Savannah ..	14,808
5	Ss.	Gulfoil, Port Arthur	37,189
8	Ss.	Gulftrade, Galveston	45,530
15	Ss.	Gulfstate, Galveston	47,111
16	Ss.	J. M. Guffey, Savannah ..	18,666
16	Ss.	Gulfstar, Port Arthur	56,707
18	Ss.	Ligonier, Port Arthur	33,001
26	Ss.	Gulfpoint, Port Arthur	49,701
26	Ss.	Baldbutte, New York	44,884
28	Ss.	Currier, Galveston	38,879
29	Ss.	Gulfstate, Galveston	47,226
		Bunker deliveries	12,498
		Total	557,057

By East Coast Oil Co.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Tamiahua, Galveston	50,902
8	Ss.	Tamiahua, Galveston	54,921
9	Ss.	Torres, New Orleans	45,605
16	Ss.	Tamiahua, Galveston	66,913
28	Ss.	Tamiahua, Galveston	66,672
		Bunker deliveries	17,386
		Total	302,399

By Empire Gas & Fuel Co.

Oct.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Derbyline, Philadelphia ..	35,403
6	Ss.	Cedarhurst, Philadelphia .	27,416
9	Ss.	British Light, Wilmington	34,938
10	Ss.	Halo, New Orleans	44,920
24	Ss.	Toco, Tocopilla	50,973
		Total	193,650

By International Petroleum Co.

Oct.	Rig	Vessel, Destination—	Bbls.
12	Ss.	Agwimoon, Marseilles	8,897
16	Ss.	Texas, Port Arthur	46,099
29	Ss.	Texas, Port Arthur	45,711
		Coastwise deliveries	90,711
		Total	191,418

By The Texas Co.

Oct.	Rig	Vessel, Destination—	Bbls.
10	Ss.	Texas, Port Neches	39,760
14	Ss.	Louisiana, Port Neches ..	26,513
18	Ss.	Virginia, Providence	*42,732
		Bunker deliveries	14,422
		Total	123,427

By Tamaulipas Petroleum Co.

Oct.	Rig	Vessel, Destination—	Bbls.
17	Ss.	Wm. Isom, New York	23,367
20	Ss.	Golaa, New York	44,634
25	Ss.	Cassimir, New York	30,612
		Total	98,613

By Panuco Boston Oil Co.

Oct.	Rig	Vessel, Destination—	Bbls.
7	Ss.	Vaba, Philadelphia	28,387
21	Ss.	Torres, Philadelphia	46,745
		Total	75,052

By Interocean Oil Co.

Oct.	Rig	Vessel, Destination—	Bbls.
30	Ss.	F-Sulphur 6, Baltimore ...	38,102

By New England Fuel Oil Co.

Oct.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Baton Rouge, Jacksonville	33,041

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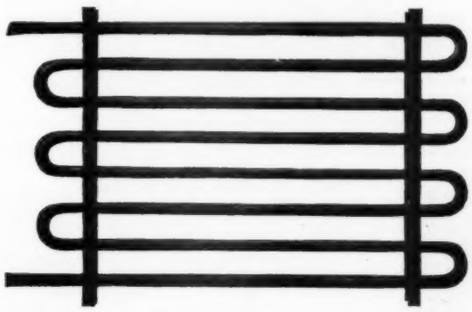

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FROM PORT LOBOS
By Transcontinental Petroleum Co.

Oct.	Rig	Vessel, Destination—	Bbls.
2	Ss.	Geo. H. Jones, Baton Rouge	37,532
2	Ss.	Hugoton, Baltimore	34,478
3	Ss.	Sucrosa, New York	26,581
5	Ss.	Swiftarrow, Baton Rouge.	43,219
6	Ss.	Hampton Roads, Baton Rouge	28,592
7	Ss.	Muskogee, New York	29,789
8	Ss.	Aztec, Charleston	21,118
9	Ss.	F-Sulphur 6, New York	9,064
10	Ss.	Dillwyn, Baltimore	32,864
13	Ss.	Olna, Baltimore	16,253
15	Ss.	Niobe, New York	19,569
22	Ss.	Agwiwold, Baltimore	26,046
23	Ss.	M. F. Elliott, New York	28,137
23	Ss.	Ardmore, New York	29,464
23	Ss.	Trontolite, New York	27,468
24	Ss.	Hugoton, Baltimore	27,670
27	Ss.	Ball Butte, New York	16,519
28	Ss.	Derbyline, Charleston	28,827
29	Ss.	Hampton Roads, Baltimore	27,845
30	Ss.	J. A. Bostwick, Montreal.	33,846
		Total	543,881

FROM TUXPAM
By Mexican Eagle Oil Co., Ltd.

Oct.	Rig	Vessel, Destination—	Bbls.
1	Ss.	San Tirso, Lizard f/o	*12,841
1	Ss.	Anomia, Land's End f/o	*4,729
1	Ss.	Belridge, New York	*24,617
1	Ss.	San Leonardo, Havana	*34,464
3	Ss.	San Nazario, Buenos Aires	*24,275
4	Ss.	Chiton, Marseilles	*35,090
6	Ss.	San Eduardo, New York	*20,580
9	Ss.	San Fabian, Lizard f/o	*51,836
10	Ss.	Cliona, Venice	*13,318
12	Ss.	Mirlo, Land's End f/o	*29,456
12	Ss.	San Gaspar, Portsmouth	*38,825
13	Ss.	San Ricardo, Las Palmas.	*13,778
15	Ss.	San Leopoldo, Rio Janeiro	*4,771
18	Ss.	Agwimoon, Marseilles	*31,743
20	Ss.	San Zeferino, Buenos Aires	*2,113
21	Ss.	San Florentino, Buenos A.	*33,247
23	Ss.	Absia, New York	*6,392
24	Ss.	Limicana, Montreal	*17,339
24	Ss.	San Macedonio, Philadelphia	*8,370
25	Ss.	San Zotico, Montreal	*4,972
26	Ss.	Akera, Panama	*7,877
26	Ss.	San Silvestre, Lizard f/o	*3,558
27	Ss.	San Lamberto, Lizmoa	*19,147
30	Ss.	San Eduardo, New York	*10,637
31	Ss.	Cretanula, Holland	7,110
		Bunker deliveries	160,159
		Total	621,244

OCTOBER SUMMARY

From—	Bbls.
Tampico	8,516,638
Port Lobos	543,881
Tuxpam	621,244
Total October, 1924	9,681,763
Total October, 1923	11,593,715
Decrease October, 1924	1,911,952

DIVISION OF MOVEMENT

To—	Bbls.
United States	6,438,080
Cuba	596,155
United Kingdom	594,814
South America	520,457
Continent	408,264
Canada	181,244
Panama	166,856
Mexican Coastwise	96,015
Central America	64,533
Azores	53,393
Bunkers (to balance)	561,952
Total	9,681,763

*Denotes topped crude.
†Denotes distillates.

REFINERS TURN TO DOMESTIC BURNER OILS

(Continued from Page 88)

late or burner oil cut averaged 36.1 degrees to 40 degrees gravity while his gas oil cut averaged from 32 degrees to 36 degrees gravity.

Straw Distillate

He pointed out that the straw distillate was not susceptible to the demands placed upon the finished kerosene, due to the inherent difference in the substance. He also declared the cost of treating kerosene would average ½-cent, which should be added to the difference between prices. With a 37-39 straw distillate selling for 3¾ cents it was his opinion that 41-43 kerosene distillate should command 4¼ cents and the 41-43 water white finished kerosene should be worth 4¾ cents. Of course he made allowances for the various influential circumstances which might enter into the prices for these products, but he held firm to the opinion there should be an appreciable difference between the kerosene and burner fuel prices.

Regarding the trend to lower gravity burner fuels, one prominent refiner asserted he did not see how any radical change in the grade of fuel used could be brought about before additional changes in the types of burner were made and the new burners were given widespread sale. He declared the flash point of the fuel was now being regulated by legislative action and the present burners were regulating the end points of the fuel in themselves, both of which have much to do with regulating the gravity and determining the other specifications of the fuel. The physical characteristics of the fuel in many respects depend upon the crude charged to the stills and the pressure dis-

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CROMWELL, OKLA.—R. C. Woods, Phone No. 53.

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tillate rerun. For the present, however, Mid-Continent refiners are preparing to furnish straw distillate from 36 to 40 degrees in gravity, with the idea they can also furnish higher flash point and lower gravity products when sufficient demand is evidenced.

From Cracking Plant

Another refiner, operating on comparatively low gravity crude, is preparing to make his entire supply of stove or burner distillate from the operation of his cracking plant. He is prepared to produce a 37-39 gravity wine colored distillate. Another refiner operating on similar crude, also takes his burner fuel from the pressure distillate only, obtaining, however, a lighter product, averaging 39-41 gravity with a flash as low as 150 degrees Fahrenheit.

A refiner with a skimming plant only is prepared to care for a big trade in burner oils during the present season, with a variety of products, ranging from 38-40 gravity 175 degrees Fahrenheit flash and 210 degrees Fahrenheit fire, to 36-38 gravity, 180-190 flash and down even to dark gas oil of 32-36 gravity. It is significant to note this is the first season this concern has attempted to go after the burner oil trade. Several other refiners also are making their first attempts for burner oil business.

Due to the ease in manufacture of distillates, consisting merely in trapping back a reflux stream from the dephlegmator towers, this refiner feels he can obtain considerable increase in revenue contingent upon fair prices for the product. He asserts he notices a tendency toward the use of heavier distillates.

One very significant matter was brought out by this refiner. He had just formed a trade connection with a burner oil jobber in a fair sized city in a Mississippi Valley State. During the summer months this jobber had obtained the agency for a recognized home oil burner of proven worth and had made a large number of new installations. He put up the proper bulk distributing equipment and arranged for an adequate supply of oil for the burners which he had installed in the homes of the city. He anticipates a good business from this source during the winter.

Step in Right Direction

It is the opinion of many refiners this specialization in the sale, installation, fuel supply and upkeep of domestic burners is a step in the right direction, leading toward more satisfaction on the part of the user, burner manufacturer and refiner alike. Through this arrangement a skilled man installs the burner and maintains them in operation. This gives the burner makers a fair chance to deliver the satisfaction necessary for the proper growth of the new industry. The installation of bulk storage and other distribution facilities centralized in the control of the man who installs the burners, affords constant and lasting supply of fuel without danger of shortage in cold weather. This is of great importance to the consumer. The construction of the storage, the concentration of the distribution of the oil in the hands of a specialist and the increased revenue available from this source is cause for satisfaction on the part of the refiner.

Most refiners do not doubt the probability of an increased demand for domestic burner fuel, although that demand in actual operation has been warded off temporarily by the nationwide warm autumn weather. During the summer months, burner manufacturers, agents, refiners and oil specialists have been busy and hundreds of new installations have been made in the homes in the Eastern and Central States particularly. Mid-Continent refiners accordingly are fully prepared to supply the fuel for these new burners and to meet any and all new demands placed upon them by this growing industry.

DEATH OF J. A. STAGE

George W. Stage, assistant district manager in Tulsa for the Continental Supply Co. has been called to Springfield, Ohio, by the death of his father, J. A. Stage.

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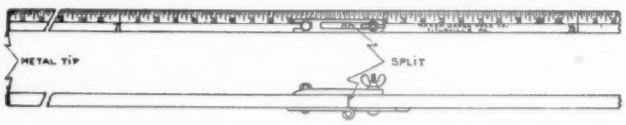

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PRATT & CADY VALVES

CONCEPTIONS OF FLUID DELIVERY EXPLAINED

(Continued from Page 127)

(i) The effects of heterogeneous porosity, permeability, viscosity, thickness of formation, etc. etc.

(j) Etc., etc., etc.

In fact, all important phenomena of the reservoir interior. These we study and determine as definitely as though all parts of the reservoir were accessible to us.

44. Just as each control has its own primary function relations so has each its own secondary function relations. For each control taken separately, the secondary functions of fluid delivery determine laws which are frequently different as between one fluid and another on account of the physical differences they possess. There are laws for gas alone, liquid alone, and both together; also laws for two liquids, with and without gas in solution.

45. The equations and curves of the primary functions can be taken "like a pill" with no understanding of the interior structure. They will work equally as well whether understood or not. In the one case we taken a swallow and then some water; in the other we take a reading and follow it with a little simple arithmetic. Results for both!

Not so with the secondary functions. We shall study the interior of the pill without breaking it open. The mathematics will perhaps be a little more difficult, and unless understood, the study will avail little because the secondary functions are not something to measure with; they are rather something to visualize, something to test our wits against in an attempt to overcome them where profitable to do so. By understanding them we understand the reservoir and by conquering them we conquer the forces of nature in this world of oil and gas, in the same way the engineer has done, and continues to do, in other economic worlds.

The Mathematics

46. The present analysis is confined almost entirely to algebra, trigonometry, coordinate geometry and elementary calculus, as these are offered in the average university course for engineering. The assumption will be made that the reader has studied these subjects, let us say, some 10 years, and has not had occasion to use the principles since that time. Those who are more proficient at the moment may find sufficient interest in the mathematical innovations which are not difficult, but which appear to possess peculiar advantages, in that they reduce a difficult problem to one of simple solution.

Let us review a few old terms and give them any little "twist" that they might require for our present needs.

Constants

47. Usually, during an investigation in physics or mechanics, or during some definite portion of it, some numbers which enter into the calculations preserve their values unchanged. These numbers are constants. This does not mean that they can never change in value, or that they must have the same value in one experiment as in another. It only means that as long as conditions, which we ourselves impose upon the experiment, are unaltered, the value of the number is unchanged. The constant may have one value during one portion of the investigation and another during the second, third, fourth, etc., portion.

Every mathematical reservoir has its own long list of constants. If we change to a new mathematical reservoir, (Article 38), by altering the valve ever so little or so much, we simply establish a new long list of constants for the functions of delivery. But as long as the orifice is not tampered with in any way, either by man's intention or nature's accidents, the constants possess the same value, even though natural decline may take place due to a fall in pressure with time.

A few constants apparently never change in value under any circumstances. These we call fixed constants. But a fixed constant for wells in one geographic

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or geologic province, the latter taken laterally or vertically, may have a value which differs from the corresponding constant for a different province.

It would be a matter of coincidence if constants should possess the same value in any two or more cases. We are not interested in the values of constants; we are only concerned with the fact that they are constants. If they change in value, still we are not interested in their absolute values, but only in their relative values; and we determine this in a very simple manner.

Constants are designated by certain letters of the alphabet. The letter C is used in equations of the fundamental primary function curves. It is frequently given subscript numbers, in order to distinquish one from another.

The letter K is frequently used with equations of the derived primary function curves and also with those of the secondary function curves. Subscripts are also sometimes necessary.

Purely mathematical equations of 10 have the letter p, with or without subscripts.

Some mathematical constants with distinctive properties are designated by Greek letters as a matter of convenience. In the discussion, then, they will always refer to the same specific thing.

Use of Constants

48. A rather liberal policy is followed out regarding the designation and use of constants. This is permissible since the absolute values are immaterial. For an example: the letter p may have one value in one part of a problem and obviously another value in a later part. When this is very obvious, no subscripts are used; we simply read "a constant" or "some constant"; perhaps of the same value as the other one and perhaps not. The convenience of this will become evident when a score or more constants commence to swing into action at once. The writing would become crowded with subscripts which have no bearing on the problem as we handle it. Occasionally, however, we must make discriminations with subscripts. We insert them when we want them, drop them if convenient and pick them up again if necessary.

49. There are certain other very important constants which are determined by the physical state of the reservoir interior with its fluid. For convenience they shall be designated as factors and they shall be represented by appropriate letters which facilitate their identity with the specific property involved.

50. A constant may be fixed in value only for an instant of time; i. e., it possesses a certain value throughout the entire reservoir at one instant but at the next instant its value is different. At a given point, then, within the reservoir, say at the bottom edge of the casing, or at any other point of interest, such a constant really becomes a variable and its value is a function of time. Greek letters are also used to represent these.

Under certain circumstances we deliberately force a constant to assume the properties of a variable, thus it becomes a function of x and y; whatever these may represent at the time. This is done graphically and will be fully explained later.

51. Constants are merely quantities of convenience throughout the present problem.

If we have a relation between two variables the relation may be expressed mathematically as a "variation"; thus, "x varies as y." Or it may be expressed as an equation by the insertion of a constant; "x equals a constant times y." Conversely, the latter may be changed to the former by the dropping of the constant. Sometimes it is convenient to swing back and forth several times within one particular investigation.

Variables

52. A variable is a quantity which changes its value continuously so that at different stages it requires different numbers to express its value. A variable, in passing from one value to another, passes through all intermediate values in their order.

Thus it is observed that variables differ from constants, inasmuch as the latter, when they change their value, do

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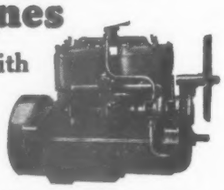

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not pass through all intermediate values; they "jump" instantaneously from one value to another. We are not concerned here with their probable behavior "during an instant of zero duration of time"; all we know is that they change erratically in value, whereas variables do not do so.

Variables are ordinarily expressed by letters of the alphabet; as x, y, z, and more when required in any specific investigation. Greek letters are also used where advantages of explicit distinction are desired.

When a constant becomes a true variable its letter is retained throughout.

The primary functions of fluid delivery are true variables. They are therefore abbreviated to P, Vo, Ve, Ac, E, Po and T when used mathematically.

Subscripts are sometimes used to show specific values which these variables possess at specific points of the investigation.

Functions

53. When two variables are mathematically related to each other, either expressed as a variation or as an equation, one variable is said to be a function of the other. Thus; if y equals px, y is a function of x, whatever y and x may represent. y is said to be the dependent variable and x the independent variable, for the value of the former depends upon the value of the latter—at least, that is the implication expressed by the equation. If the equation is reversed; x equals y/p, then the value of x depends upon y.

A variable is often a function of more than one other variable; thus, z^2 equals $a^2-x^2-y^2$.

54. It has already been observed that we speak of the functions of delivery and the functions of the reservoir. This use of the term function agrees with statements in the preceding article. A mathematical relation is always implied whenever the expression is used. When we say that pressure is a function of delivery we imply that pressure is a mathematical function of some other variable concerning delivery, as time, or volume, etc. Pressure as a function of a reservoir may imply that pressure is a mathematical function of the distance from the orifice, etc.

Formulas and Curves

55. "Formula" is a convenient expression denoting either a variation, as, y varies as x, or an equation, y equals px.

A formula can be expressed either in words or symbols or it can be expressed graphically. The graphic representation constitutes a curve. There are not restrictions as to the actual appearance of this curve; it may be a point, a straight line, a line which is not straight, a surface, etc.

56. Formula involving two variables may be represented graphically on a plane sheet of paper. Those having three variables require a surface which is not plane. Frequently a model is used to represent such a formula. If we are interested in only a few specific values of the third variable, a series of curves can be drawn on the same sheet or on separate sheets of paper, giving the third variable the particular "constant" values which are of interest.

57. There are several mesh systems to which curves may be plotted. Perhaps the simplest and most familiar is the rectangular or Cartesian coordinate system. This one generally suits our purpose admirably. Occasionally the polar corordinate system is more convenient: e. g., in some problems concerning radial flow toward the orifice.

The use of logarithmic coordinates has become well established in oil and gas field practice, so this system is frequently used here, although merely as a supplement to corresponding rectangular coordinate curves.

58. Curves serve a double purpose. Their formulas may be determined by higher mathematics, the curves plotted, and problems may be solved thereafter by simple arithmetic, using the curve as a measuring device.

They also picture to the eye, at a glance, the relation existing between the variables. The untrained eye is more accustomed to visualizing space according to rectangular or polar coordinates, the

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differ from constants, inasmuch as the latter, when they change their value, do

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scales of which are constant; i. e., equal intervals of space along the scale divided by equal increments of the variable represented, is constant. The trained eye is not at all inconvenienced in picturing the relations when the scales are variable; i.e., equal intervals of space along the scale divided by equal increments of the variable, is itself variable. But the eye must become accustomed to each class of variable scales. The logarithmic scale is such a variable scale.

The Period of Time

59. The time during which constants of delivery may be expressed by the same actual number is designated the period of time. It corresponds to the length of time during which one particular "mathematical reservoir" (Article 38) exists. A period of time may begin and terminate at any moment during the production of fluid from the orifice. If we turn a valve on a well, for instance we set up a new mathematical reservoir; we end one period of time and begin another — the constants have been forced to take new values.

60. The data observed at the orifice for one period of time can only be combined with that for another by adjusting one set of data so as to conform to the other; thus both sets of data are placed on equal footing—they have the same zero point of reckoning after the adjustment.

The laws by which such adjustments are made are actually the laws of fluid delivery to a specal purpose.

61. Figuratively speaking, the instant marking the end of one period of time and the beginning of another indicates to us the instant at which we should turn the page in the record book wherein the performance of the well is tabulated. If

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we do not make the adjustments of the preceding article, it also indicates the instant at which we must start a new curve on the well's performance. It is surely the same hole in the group before and after the change but we have not the same reservoir for the two periods of time.

Magnitude

62. Reservoirs and their functions, their formulas and their curves have mathematical magnitude. The mathematical magnitude may or may not be the same as the physical magnitude of the thing which they are or the thing which they represent. In treating of fluid delivery we deal with three magnitudes; namely, zero, finite and infinite magnitudes.

* * *

The next installment concludes these fundamental conceptions.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, DECEMBER 18, 1924, BY U. S. GOVERNMENT

December 18, 1924, at Pawhuska, Oklahoma, about 30,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual instalments, with acceptable security. Within advertised area there are about 9,200 oil wells producing from one barrel to two thousand barrels each, the total daily production for September, 1924, being about 100,000 barrels; also there are about 150 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE REPORT FOR SEPTEMBER

Runs

	Month	Dy. Av.
*Prairie P. L. Co.	4,080,000	136,000
Gulf P. L. Co.	1,275,517	42,517
Texas P. L. Co.	366,444	12,215
Magnolia Pet. Co.	1,166,513	38,884
Empire P. L. Co.	847,309	28,243
Cosden P. L. Co.	716,288	23,876
*Sinclair P. L. Co.	1,095,000	36,500
*Other lines	9,120,000	304,000
Total Sept.	18,667,071	622,235
Total August	18,781,813	605,865
Difference	114,742	16,370

Shipments

†Prairie P. L. Co.	3,024,324	100,811
Gulf P. L. Co.	1,109,937	36,998
Texas P. L. Co.	822,971	27,432
Magnolia Pet. Co.	800,706	26,690
Empire P. L. Co.	1,113,413	37,114
Cosden P. L. Co.	672,237	22,408
†Sinclair P. L. Co.	1,886,922	62,864
Other lines	8,520,000	284,000
Total Sept.	17,949,510	598,317
Total August	17,573,320	566,881
Difference	376,190	31,436

Stocks

*Prairie Oil & Gas Co.	26,000,000
*Prairie Pipe Line Co.	2,000,000
Gulf P. L. Co. and Gypsy Oil Co.	9,822,425
The Texas Co.	6,319,335
Magnolia Pet. Co.	9,350,096
Empire Pipe Line Co.	3,163,256
Cosden Pipe Line Co.	2,968,275
*Sinclair Crude Oil Purchasing Co.	29,550,000
Carter Oil Co.	17,843,447
*Other lines	10,600,000
Total September	117,616,834
Total August	116,674,160
Difference	942,774

*Estimated. †Includes shipments of Texas crude by Prairie Pipe Line and Texas and Wyoming crude by the Sinclair Pipe Line.

Note—Stocks do not include approximately 8,600,000 bbls. of crude oil held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept.'24	Oct.'24
National Transit..	182,088.41	199,575.25
S. W. Pa. P. L...	78,896.56	90,883.89
Eureka P. L.	351,485.53	396,959.58
Buckeye Pipe Line (Macksburg) ...	266,724.36	288,639.76
Buckeye Pipe Line (Cleveland)	14,345.30	15,068.52
Buckeye Pipe Line (Lima, etc.)	137,043.37	145,493.29
Indiana Pipe Line.	13,098.14	13,732.04
Cumberland P. L...	343,759.39	353,376.22
New York Transit	17,950.12	19,341.15
Tide Water P. L...	148,166.41	145,975.11
Pure Oil Pipe Line	189,939.55	193,849.91
Emery Pipe Line..	39,983.11	43,225.22
Indian Refining ...	58,273.83	62,081.48
Paragon Dev.....	33,270.91	37,082.21
Pittsburgh P. L. ..	6,374.72	8,975.04
Total	1,887,898.71	2,014,258.67
Daily average...	62,929.96	64,976.08

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept.'24	Oct.'24
National Transit...	326,398.90	316,814.05
S. W. Pa. P. L....	314,914.21	314,257.16
Eureka Pipe Line..	164,748.30	172,363.77
Buckeye Pipe Line (Macksburg) ...	88,058.06	100,388.72
Buckeye Pipe Line (Cleveland	1,214.51	1,402.46
Buckeye Pipe Line (Lima, etc.)	532,150.99	400,601.18
Indiana Pipe Line..	750,599.95	775,886.48
Cumberland P. L...	132,518.69	121,292.74
Southern P. L.	.....	.....
Crescent Pipe Line.	.....	.....
New York Transit.	437,758.87	521,646.52
Northern Pipe Line	125,166.94	136,838.32
Tide Water P. L...	125,057.78	156,746.09
Pure Oil Pipe Line.	229,439.68	144,366.46
Emery Pipe Line..	41,884.28	42,307.10
Paragon Refining..	68,348.08	93,965.35
Indian Refining ...	433,576.20	477,162.81
Paragon Dev.	36,936.44	31,059.70
Pittsburgh P. L...	10,978.98	11,164.71
Total	3,819,750.86	3,818,263.62
Daily average ..	127,325.03	123,169.79

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept.. '24	Oct. '24
National Transit..	961,508,69	1,058,840.27
S. W. Pa. P. L...	724,341.53	699,936.45
Eureka P. L. ..	1,697,079.59	1,884,227,94
Buckeye Pipe Line (Macksburg) ..	352,911.42	407,451.51
Buckeye Pipe Line (Cleveland) ...	46,294.83	53,051.25
Buckeye Pipe Line (Lima, etc.) ..	4,175,978.70	4,474,343.57
Indiana Pipe Line	679,016.62	643,838.15
Cumberland P. L.	605,423.86	623,817.30
Southern P. L...	630,608.67	464,510.66
Crescent P. L. ..	58,433.71	58,247.53
N. Y. Transit ...	763,797.71	799,179.98
Northern P. L. ..	914,613.78	863,572.00
Tide Water P. L.	.....	.....
Pure Oil P. L...	328,576.77	371,999,94
Emery P. L.	6,003.80	7,444.98
Paragon Ref.	79,035.93	90,298.77
Indian Ref.	168,875.27	157,931.51
Paragon Dev. ...	10,287.89	8,649,08
Pittsburgh P. L..	4,047.30	6,180.28
Total 12,206,835.87		12,664,061.12
Increare	.....	457,225.25
Decrease	14,839.68	

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of September and October, showing the gross stocks of the above fields:

	Sept. '24	Oct. '24
Pennsylvania	3,707,179.82	3,930,646.58
Lima	1,317,819.86	1,326,652.80
Kentucky	1,522,433.32	1,482,174.97
Mid-Continent ...	5,592,672.05	5,808,670.66
Illinois	66,730.82	116,916.11
Total 12,206,835.87		12,664,061.12

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
January	64,460	67,702	75,790	62,638
February	70,054	75,096	71,093	68,023
March	68,555	78,531	76,592	68,721
April	65,036	75,462	75,614	71,058
May	65,466	77,592	77,365	63,942
June	62,438	76,193	77,593	63,230
July	59,486	76,435	71,879	64,208
August	64,888	79,387	76,910	59,942
September ..	60,110	78,512	72,358	62,930
October	67,668	77,209	76,256	64,976
November	58,470	75,313	70,752	.....
December ...	61,000	73,351	69,271	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1921	1922	1923	1924
January ..115,550		119,792	171,067	145,518
February . 96,736		111,362	164,219	148,732
March 84,168		127,753	185,487	147,098
April 101,015		127,068	170,751	147,611
May 100,253		127,840	177,102	134,997
June 105,037		137,638	173,598	143,010
July 97,096		137,872	168,330	124,187
August 101,652		153,275	142,766	123,120
September 117,440		158,761	137,266	127,325
October ...105,728		165,345	134,597	123,170
November 121,803		165,677	131,426	.....
December 104,023		172,861	139,909	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1922	1923	1924
January ...	16,297,858	14,040,567	12,907,202
February ..	17,009,293	14,028,437	11,944,903
March	16,877,937	13,873,146	10,906,752
April	16,777,842	13,737,575	10,922,742
May	16,948,962	13,815,622	11,335,309
June	16,810,169	14,541,253	11,544,304
July	16,660,286	14,645,584	12,062,361
August	16,235,229	14,770,539	12,221,676
Sept.	16,228,545	14,803,444	12,206,836
October ...	15,757,746	14,504,111	12,664,061
Nov.	15,171,972	14,157,726	.....
December ..	14,323,765	13,444,361	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1932—	Receipts	Shipments	Stocks
October	2,694.23	5,251.81	17,324.79
November	2,980.66	4,150.96	16,154.47
December	2,893.07	3,499.27	15,548.27
1924—			
January	2,942.19	8,641.71	9,949.75
February	2,151.78	1,926.55	10,073.98
March	3,398.78	1,716.28	11,756.48
April	3,311.84	2,066.78	13,001.54
May	3,036.50	5,338.21	10,699.83
June	3,188.81	497.31	13,481.13
July	3,067.74	3,334.29	13,214.58
August	2,901.36	6.21	16,109.73
September	2,794.58	5,775.89	13,128.42
October	3,342.40	1,880.50	14,590.32

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1	2,279,684.60
Runs from wells	711,272.03
Other receipts	126,289.83
Regular deliveries	593,072.21
Other deliveries	275,776.55

The amount of Illinois oil run by the Tidewater Pipe Line Co. in October was 30,494.73 bbls., and deliveries were 40,791.56 bbls. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

	Runs	Deliveries
1922—		
October	576,867.99	347,912.52
November	546,859.43	285,092.09
December	534,185.04	282,542.43
1924—		
January	493,337.25	280,782.69
February	535,496.70	355,613.14
March	611,289.36	369,542.51
April	514,356.43	339,566.10
May	751,080.44	510,414.42
June	725,060.87	528,403.38
July	759,646.84	552,386.50
August	720,457.72	519,335.79
September	714,875.36	535,782.99
October	741,767.42	543,963.77

The Tidewater Pipe Co., Ltd., also delivered in October 244,660.26 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 442,197.91 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

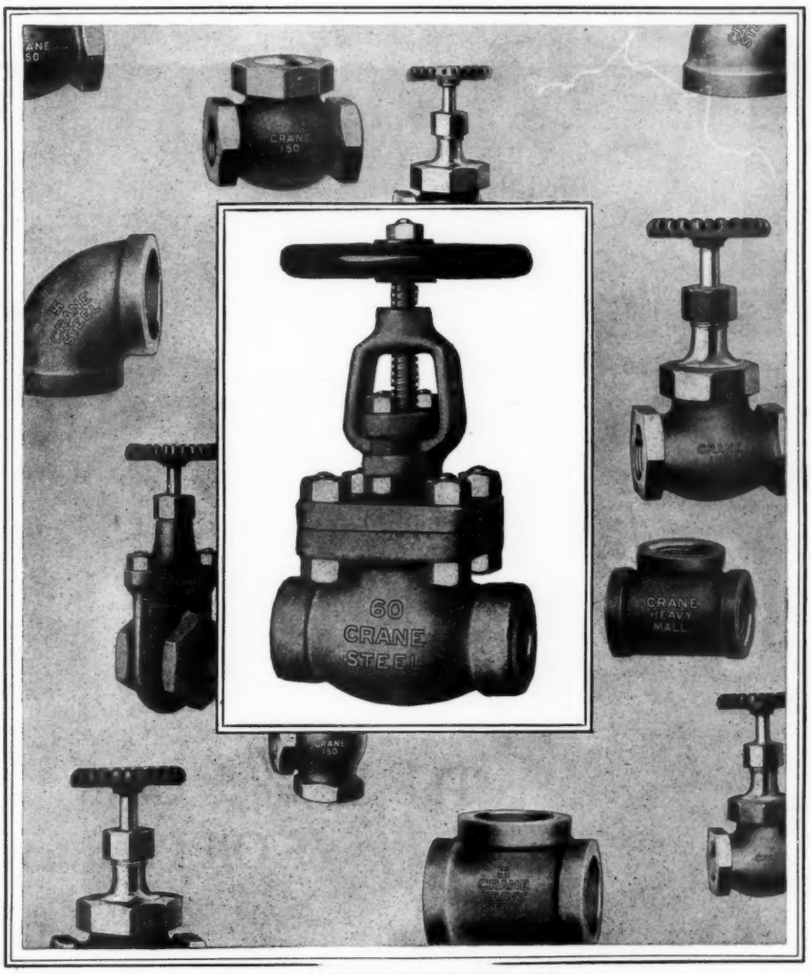
Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
May	42,903	33,194	616,709	92,706	61,642	846,154	.....	70,127	.....	.....	70,127	916,281
June	121,800	34,300	581,000	103,369	51,331	891,800	.....	.....	.....	.....	.....	891,800
July	37,710	16,129	473,516	84,452	42,452	654,249	.....	16,936	.....	.....	.....	671,185
August	114,032	33,419	654,387	71,806	33,871	907,515	907,515	.....	6,774	.....	.....	914,289

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
March	148,358	141,806	283,458	124,642	292,642	990,906	463,806	365,358	223,552	55,545	1,108,261	2,099,167
April	152,369	154,931	913,900	94,962	248,969	971,131	382,900	348,131	119,000	15,869	865,900	1,837,031
May	156,485	134,602	288,903	59,613	300,097	939,699	315,679	295,358	199,591	38,164	848,792	1,788,491
June	120,169	108,731	434,931	68,131	239,400	971,362	412,741	251,762	159,831	33,831	858,165	1,829,527
July	62,097	81,291	445,067	38,418	277,970	904,843	320,194	273,455	130,739	34,973	759,361	1,666,204
August	80,839	57,355	247,710	98,903	207,065	691,872	370,549	238,677	115,839	14,677	739,742	1,431,614

GROSS PRODUCTION AND DAILY AVERAGE IN THE UNITED STATES FOR 12 MONTHS

1923—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming-Montana	Other Fields	Total
October:	Month	24,576,400	12,961,782	15 932,383	2,336,346	3,120,274	1,837,990	3,540,830	3,475,913	67,782,968
	Daily average	792,787	418,122	513,980	75,366	100,654	59,290	114,223	112,126	3,122,937
November:	Month	22,397,848	12,334,620	15,556,507	2,268,840	2,973,000	1,816,860	4,792,466	3,138,464	65,278,605
	Daily average	746,595	411,154	518,550	75,628	99,100	60,562	159,782	104,615	2,175,953
December:	Month	21,899,247	12,232,259	10,065,856	2,345,150	4,017,850	1,919,574	3,304,326	3,147,812	63,932,074
	Daily average	706,427	394,589	324,705	75,650	129,608	61,922	106,591	101,542	1,901,034
1924—										
January:	Month	20,912,500	12,292,833	10,336,643	2,333,878	3,686,680	1,601,175	4,636,230	2,950,500	58,640,439
	Daily average	674,597	396,543	333,449	71,738	118,925	51,651	149,556	96,177	1,891,627
February:	Month	19,341,226	12,236,637	10,495,486	2,112,853	3,302,750	1,497,450	4,165,450	2,997,700	56,152,553
	Daily average	666,939	421,953	361,913	72,857	113,888	51,629	143,740	103,369	1,936,295
March:	Month	19,913,262	13,336,851	13,077,617	2,206,425	3,882,695	1,701,593	3,993,890	3,258,000	60,370,333
	Daily average	642,363	430,221	389,601	71,175	125,248	54,890	128,835	105,097	1,947,430
April:	Month	19,299,849	13,452,240	11,725,830	2,265,090	4,068,225	1,496,582	3,901,755	3,231,000	59,439,571
	Daily average	643,328	448,408	390,861	75,503	135,608	49,853	130,058	107,700	1,981,319
May:	Month	19,833,576	14,248,057	11,923,316	2,486,696	4,659,117	1,596,701	4,033,564	3,355,000	62,136,027
	Daily average	639,792	459,615	384,623	80,216	150,291	51,507	130,109	108,226	2,004,065
June:	Month	18,807,999	14,457,390	11,515,020	2,473,320	4,766,443	1,811,880	3,798,624	3,211,500	60,832,126
	Daily average	626,933	481,913	383,834	82,444	158,548	60,419	126,621	107,050	2,027,738
July:	Month	19,274,755	15,191,860	11,320,889	2,678,834	4,598,160	1,931,641	3,738,536	3,387,990	62,612,664
	Daily average	621,766	490,050	381,319	86,414	148,321	62,311	120,275	109,290	2,019,796
August:	Month	19,112,998	16,572,104	11,805,753	2,717,398	4,400,116	1,898,246	3,816,627	3,380,017	63,603,259
	Daily average	616,548	534,584	380,831	87,658	141,810	61,234	123,117	109,097	2,051,718
September:	Month	18,308,233	16,299,030	10,670,640	2,688,690	4,022,025	1,811,985	3,427,455	3,305,700	60,533,768
	Daily average	610,274	543,301	355,688	89,623	134,068	60,996	114,249	110,190	2,017,792
	Total 12 months	243,677,893	165,615,663	143,926,940	28,802,512	47,487,235	20,920,677	47,142,802	38,739,596	736,524,418
	Daily average	666,789	452,502	393,243	78,698	129,747	57,160	128,805	105,846	2,011,799



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In many large refineries, valve maintenance in small hot lines has been materially reduced by using cast steel *globe* valves in place of gate valves.

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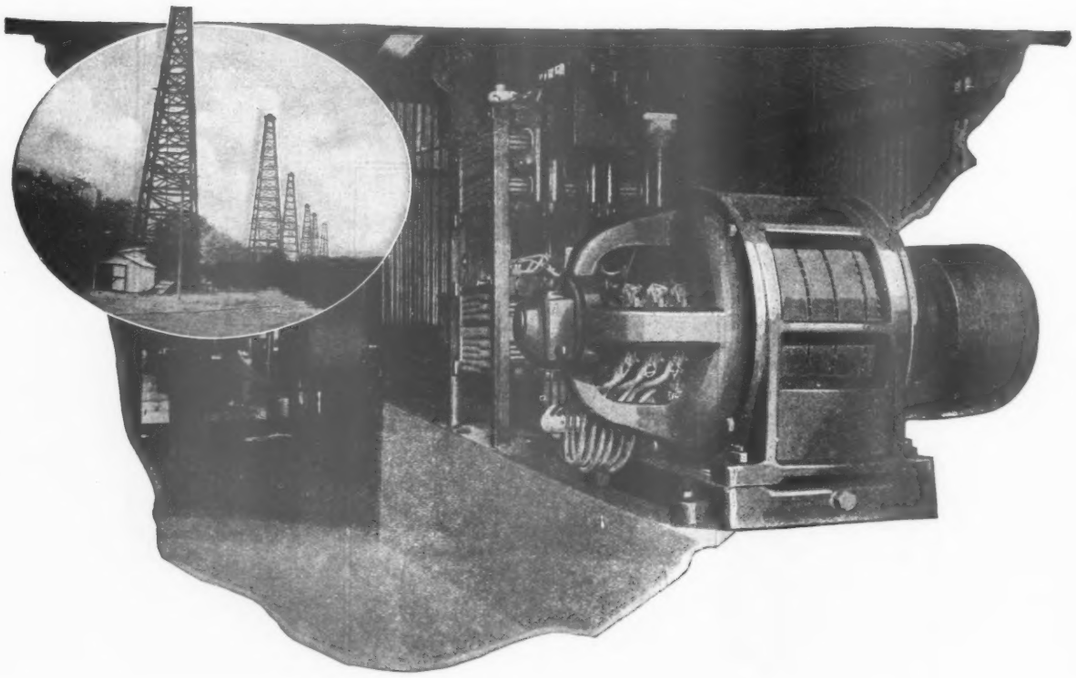

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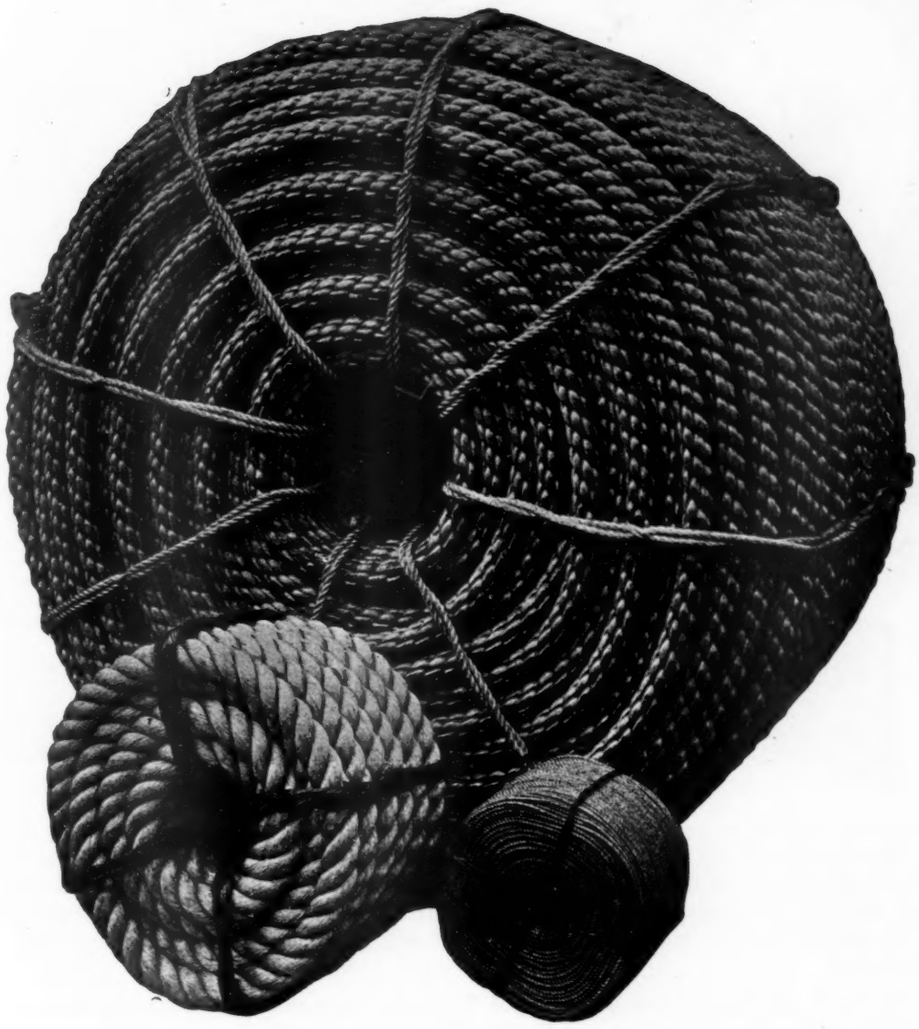

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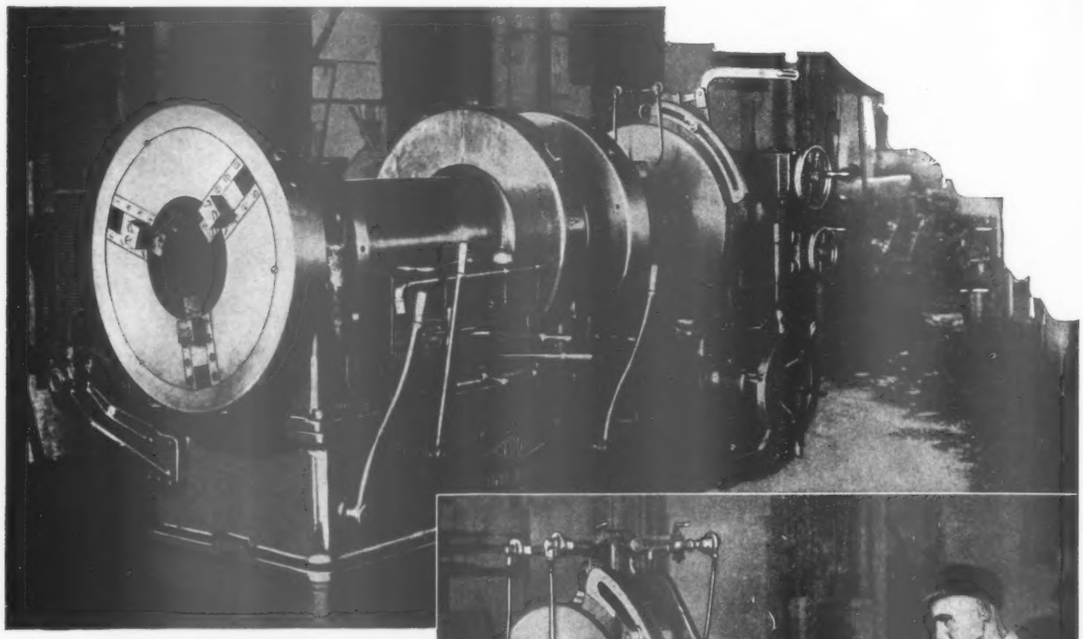

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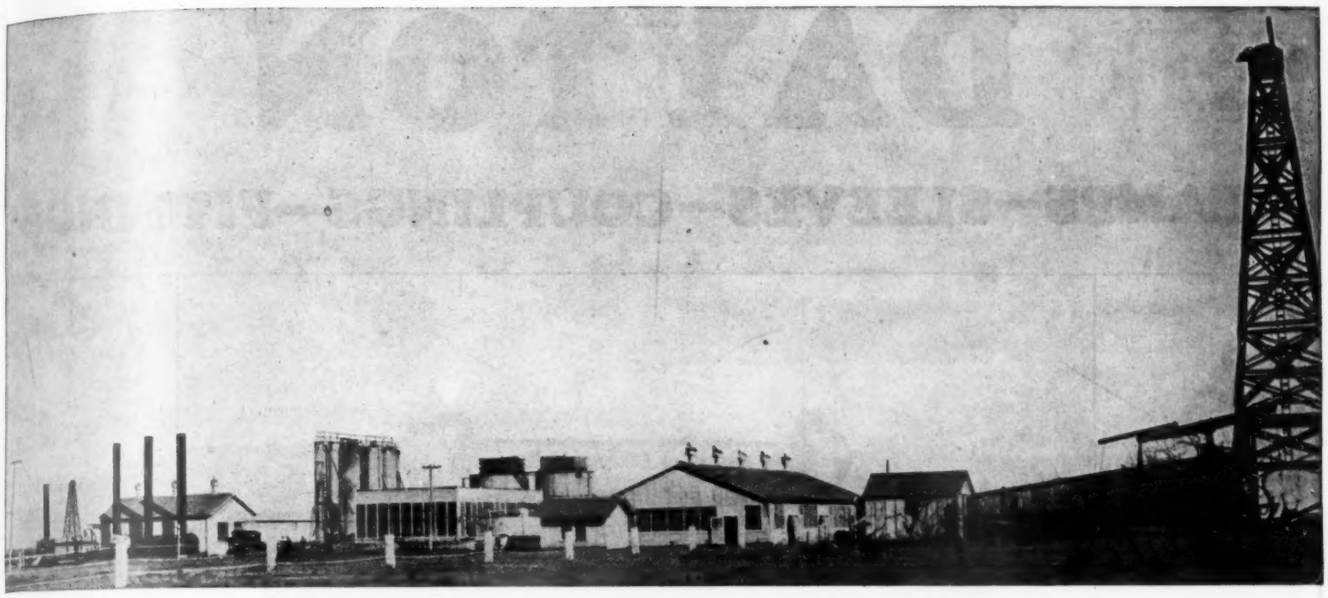

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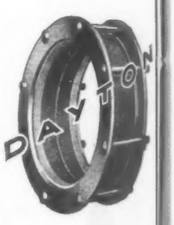

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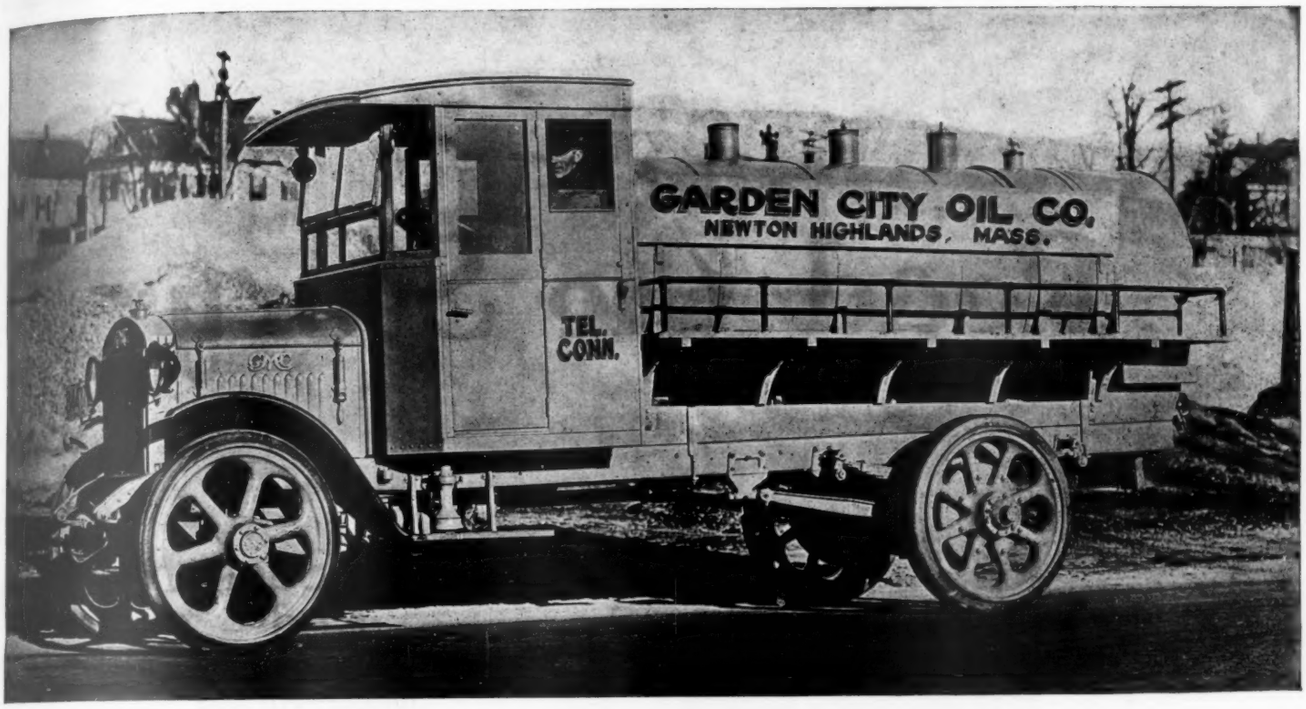

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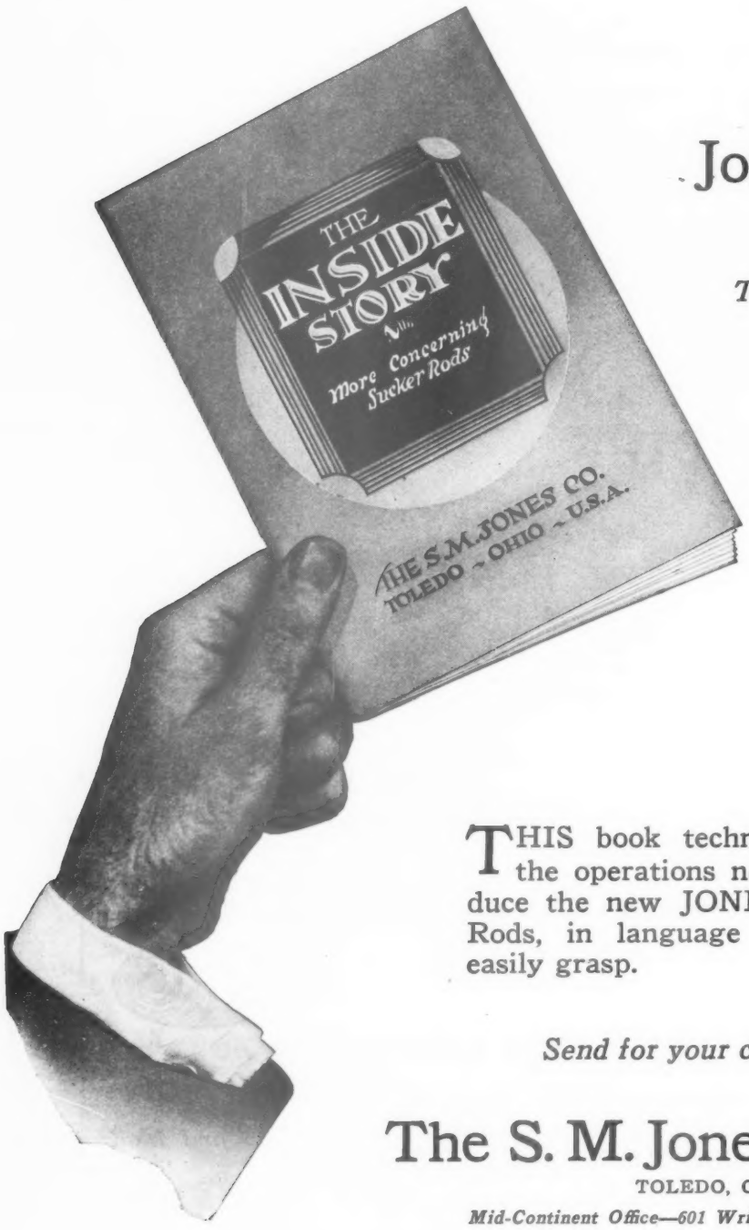

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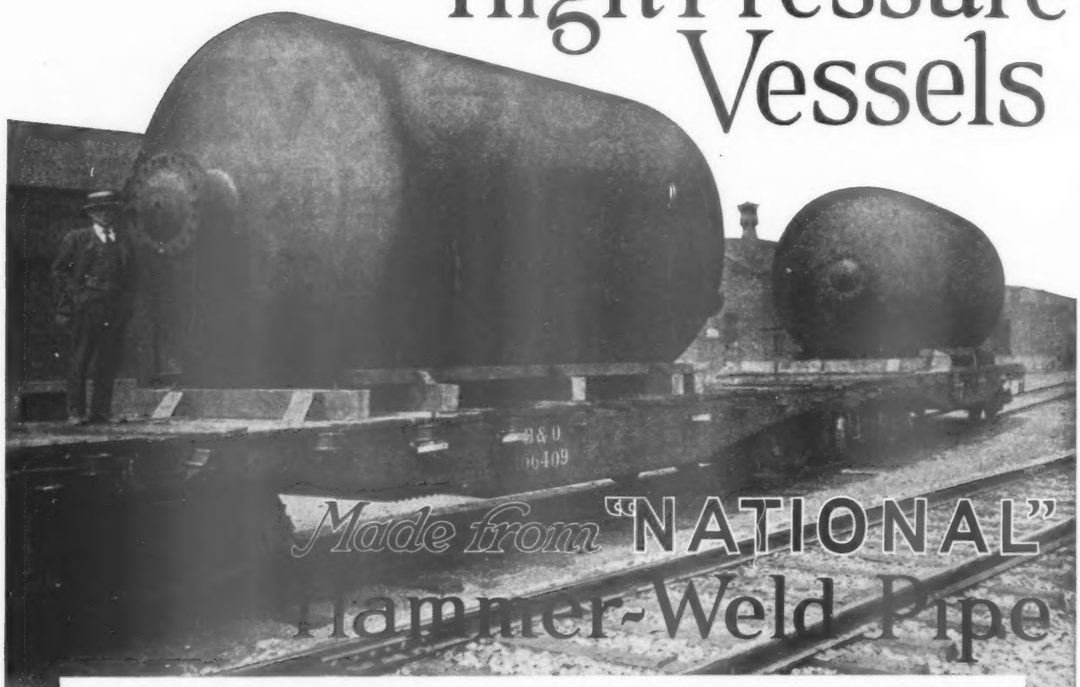

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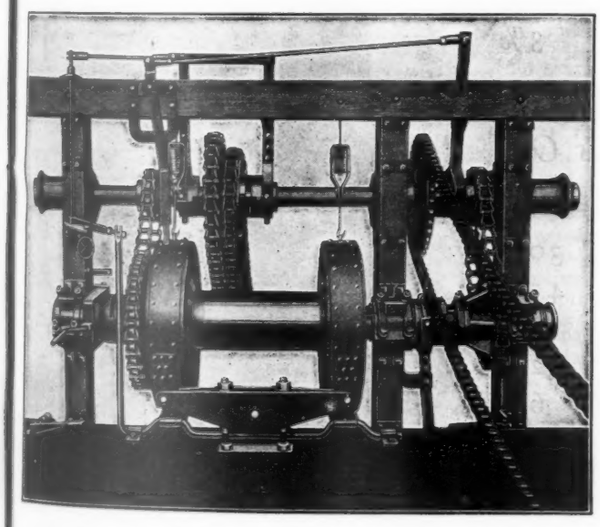

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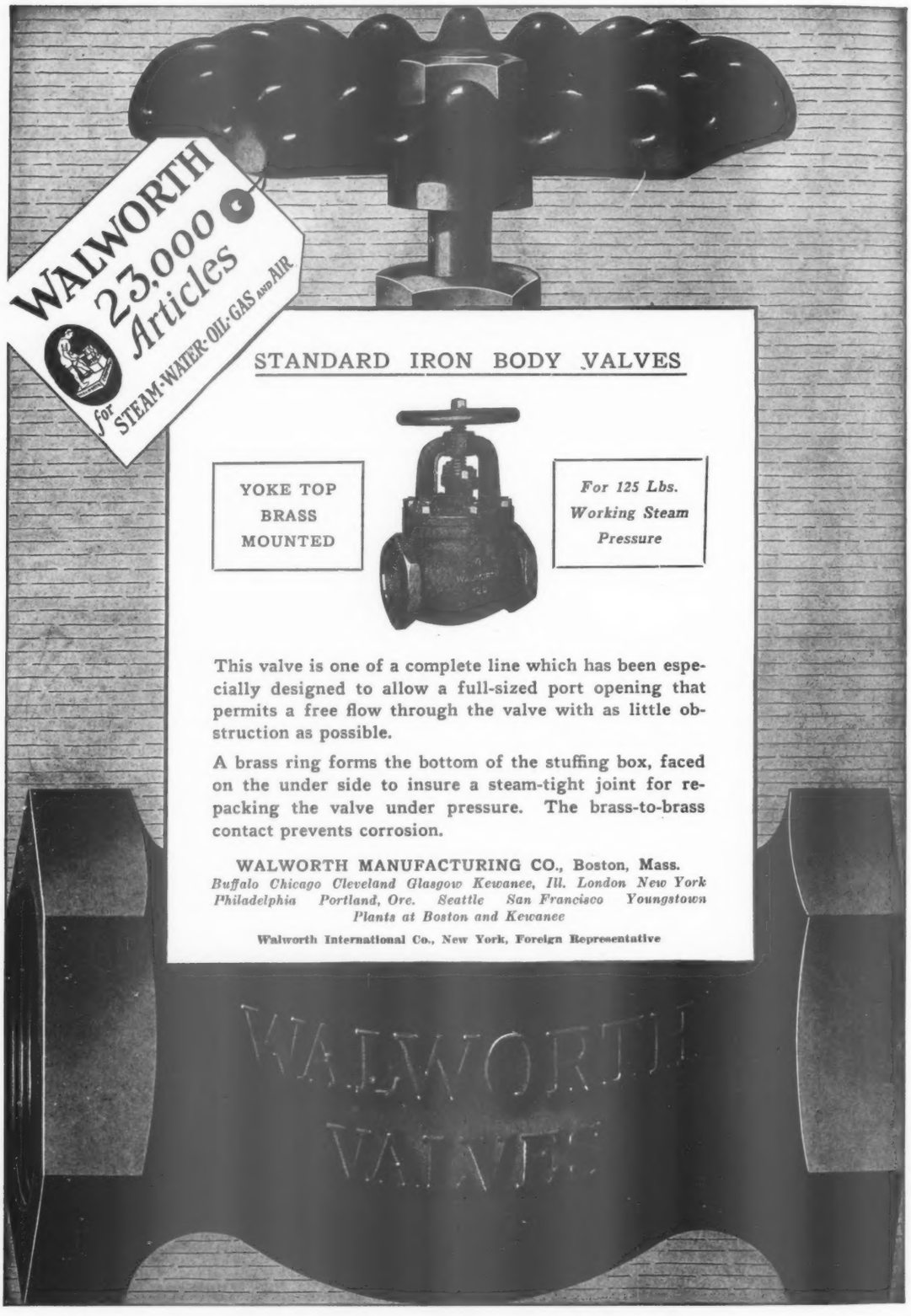
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